SHOUT
SHARE
IT

# THE
# BIOLOGICAL BULLETIN

PUBLISHED BY
THE MARINE BIOLOGICAL LABORATORY

## INDEX TO VOLUMES 81-104

JUNE, 1955

Printed and Issued by
LANCASTER PRESS, INC.
PRINCE & LEMON STS.
LANCASTER, PA.

LANCASTER PRESS, INC., LANCASTER, PA.

TABLE OF CONTENTS


| | Page |
|---|---|
| Author Index | 1 |
| Subject Index | 71 |


73254

# AUTHOR INDEX

## A


**Abell, Richard G., and I. H. Page.** Behavior of the arterioles in hypertensive rabbits and in normal rabbits, following injections of angiotonin (abstract) ..... 1941 **81** 293

**Abell, R. G., and William M. Parkins.** Gelatin as a plasma substitute, with special reference to pseudo-agglutination (abstract) ..... 1944 **87** 162

**Abelson, Philip H.** Permeability of eggs of Arbacia punctulata to radioactive phosphorus ($P^{32}$) (abstract) ..... 1947 **93** 203

Studies of the chemical form of $P^{32}$ after entry into the Arbacia egg (abstract) ..... 1948 **95** 262

**Abelson, P. H., and William R. Duryee.** Radioactive sodium permeability and exchange in frog eggs ..... 1949 **96** 205

**Abelson, Philip H.** *See* William R. Duryee (abstract) ..... 1947 **93** 225

**Abramowitz, A. A., F. L. Hisaw and D. N. Papandrea.** The occurrence of a diabetogenic factor in the eyestalks of crustaceans ..... 1944 **86** 1

**Abrams, Richard, J. M. Goldinger and E. S. Guzman Barron.** Synthesis reactions with acetic acid in isolated bone marrow (abstract) ..... 1948 **95** 284

**Addison, W. H. F.** The distribution of elastic tissue in the arterial pathway to the carotid bodies in the adult dog (abstract) 1941 **81** 293

**Agersborg, H. P. K.** The distribution of the cerebrospinal fluid in the lower vertebrates (abstract) ..... 1948 **95** 261

**Alfert, Max.** Studies on basophilia of nucleic acids: The methyl green stainability of nucleic acids ..... 1952 **103** 145

**Alfert, Max.** *See* Daniel Mazia ..... 1953 **104** 57

**Allee, W. Clyde, A. J. Finkel, H. R. Garner, G. Evans and R. M. Merwin.** Some effects of homotypic extracts on the rate of cleavage of Arbacia eggs ..... 1942 **83** 245

**Allee, W. C., and J. C. Dickinson, Jr.** A contribution toward a knowledge of dominance in the smooth dogfish, Mustelus canis Mitchell (abstract) ..... 1952 **103** 290

**Allen, Ezra.** Studies on degenerating testicular cells in immature mammals (abstract) ..... 1949 **97** 229

Development of spermatozoa in albino rats from 9 to 50 days of age (abstract) ..... 1949 **97** 230

**Allen, Mary Belle.** Photosynthesis of Ulva (abstract) ..... 1947 **93** 203

**Allen, Robert Day.** Effect of janus green B on cleavage and protoplasmic viscosity (abstract) ..... 1950 **99** 353

Antimitotic substances secreted from eggs (abstract) ..... 1951 **101** 214

The role of the nucleolus in spindle formation (abstract) ..... 1951 **101** 214

A visible response to stimulation in Spisula eggs (abstract) ... 1952 **103** 283

The behavior of Spisula eggs with respect to potassium ions (abstract) ..... 1952 103 290
**Allen, T. H.** *See* J. H. Bodine ..... 1941 81 388
**Alscher, Ruth P.** Description of, and lipid localization in cells of the body cavity fluid of Arenicola marina Lamarck, and Amphitrite ornata Leidy (abstract) ..... 1949 97 253
**Alscher, Ruth P., and George I. Lavin.** Birefringence of granules in the epidermis of the leaves of Spinacea oleracea L. (abstract) ..... 1951 101 215
**Alscher, Ruth P.** *See* Charles G. Wilber (abstract) ..... 1947 93 202
**Alsup, F. W.** Photodynamic studies on Arbacia eggs (abstract) . 1941 81 297
**Amberson, William R., Joye J. Jennings and C. Martin Rhode.** Recent experience with hemoglobin-saline solutions (abstract) 1944 87 161
**Amberson, William R., R. Dale Smith, Betty Chinn, Sylvia Himmelfarb and John Metcalf.** On the source of birefringence within the striated muscle fiber (abstract) ..... 1949 97 231
**Amberson, William R., R. Dale Smith, Sylvia Himmelfarb, Carolyn Stoudt and Hans Hoch.** Complex formation in protein solutions obtained by mild extraction of skeletal muscle (abstract) ..... 1950 99 314
**Anderson, Bertil G., and H. L. Busch.** Allometry in normal and regenerating antennal segments in Daphnia ..... 1941 81 119
**Anderson, B. G., and Joseph C. Jenkins.** A time study of events in the life span of Daphnia magna ..... 1942 83 260
**Anderson, John Maxwell.** A cytological and cytochemical study of the male accessory reproductive glands in the Japanese beetle, Popillea japonica (Newman) ..... 1950 99 49
Sexual reproduction without cross-copulation in the freshwater triclad turbellarian, Curtisia foremanii ..... 1952 102 1
**Anderson, Norman G.** *See* Karl M. Wilbur ..... 1950 98 19
**Anderson, Rubert S.** A delayed effect of X-rays on pepsin (abstract) ..... 1947 93 189
**Anderson, Thomas F.** *See* E. B. Harvey ..... 1943 85 151
**Anderson, William W., Joseph E. King and Milton J. Lindner.** Early stages in the life history of the common marine shrimp, Penaeus setiferus (Linnaeus) ..... 1949 96 168
**Andrews, E. A.** Parafolliculina violacea (Giard) at Woods Hole, Mass. ..... 1942 83 91
**Andrus, William D.** *See* George T. Scott (abstract) ..... 1952 103 308
**Anfinson, C. B.** *See* Claude A. Villee (abstract) ..... 1950 99 322
**Armstrong, Philip B.** Comparison of dye elimination in the developing liver and the developing kidney (pronephros) (abstract) ..... 1952 103 289
**Armstrong, Philip B., and D. R. Shanklin.** Facilitation of hydrogen ion passage across the chorion of Fundulus by the chlorides of calcium, potassium and sodium (abstract) ..... 1952 103 291
**Armstrong, P. B.** *See* D. R. Shanklin (abstract) ..... 1952 103 295
**Arnold, W. A.** *See* A. S. Holt (abstract) ..... 1949 97 268
**Ash, Frank.** *See* Samuel A. Matthews ..... 1951 101 157

**Atwood, K. C.** Detection of physiological mutants in Neurospora without the use of selective media (abstract) ..... 1949 97 254
Homology patterns of induced lethal mutations in Neurospora crassa (abstract) ..... 1950 99 332
**Augustinsson, Klas-Bertil.** On the specificity of cholinesterase (abstract) ..... 1948 95 241

## B

**Bacila, Metry, and R. R. Ronkin.** On the presence of lactose in the hypobranchial gland of the snail, Busycon canaliculatum L. (abstract) ..... 1952 103 296
**Baernstein, Harry D.** *See* Theodor von Brand ..... 1950 98 266
**Bailey, Basil, P. Koran and H. C. Bradley.** The autolysis of muscle of highly active and less active fish ..... 1942 83 129
**Baily, Norman A.** *See* Sally Kelly ..... 1951 100 188
*See* Sally Kelly (abstract) ..... 1951 101 239
**Baldwin, Ernest, and Warren H. Yudkin.** Phosphagen in annelids (Polychaeta) (abstract) ..... 1948 95 273
**Ball, Eric G.** Echinochrome; its absorption spectrum; $pK_1$/value; its concentration in the eggs, amoebocytes and test of Arbacia punctulata (abstract) ..... 1949 97 231
**Ball, Eric G., and Octavia Cooper.** On the occurrence of myoglobin in Busycon canaliculatum (abstract) ..... 1947 93 189
Chromoproteins in the tentacles of Physalia (abstract) ..... 1947 93 204
Direct spectroscopic observations on cytochrome oxidase and its reaction with carbon monoxide (abstract) ..... 1950 99 317
**Ball, Eric G.** *See* C. F. Strittmatter (abstract) ..... 1952 103 317
*See* R. K. Crane (abstract) ..... 1948 95 248
**Ballard, William W.** The mechanism for synchronous spawning in Hydractinia and Pennaria ..... 1942 82 329
**Balzer, Dorothy T., and Claude A. Villee.** Drugs inhibiting growth and nucleic acid synthesis in Arbacia embryos (abstract) ..... 1951 101 204
**Balzer, Dorothy T.** *See* C. A. Villee (abstract) ..... 1951 101 195, 231
**Barnes, T. Cunliffe.** Bio-electrical models of energy transformation in nerve (abstract) ..... 1949 97 268
Production of a wave of negativity by acetylcholine at a phase boundary (model of the nerve impulse) (abstract) ..... 1947 93 222
**Barnes, T. C., and R. Beutner.** The wave of negativity produced by acetylcholine conducted over an oil-saline interface (abstract) ..... 1948 95 281
Experiments supporting the phase-boundary theory of bioelectricity (abstract) ..... 1950 99 314
**Barness, Lewis A.** *See* Carroll M. Williams ..... 1943 84 263
**Barnett, Robert C.** Cell division inhibition in Arbacia and Chaetopterus eggs and its reversal by Krebs cycle intermediates and certain phosphorus compounds ..... 1953 104 263

**Barron, E. S. G., and J. M. Goldinger.** Intermediary carbohydrate metabolism of eggs and sperm of Arbacia before and after fertilization (abstract) ..... 1941 **81** 289
**Barron, E. S. G., J. E. Seegmiller, E. C. Mendes and H. T. Narahara.** The effect of nitrogen mustards on the respiration and fertilization of sea urchin sperm and eggs ..... 1948 **94** 267
**Barron, E. S. Guzman.** Studies on the mechanism of action of ionizing radiations:
IV. Effect of X-ray irradiation on respiration of sea urchin sperm ..... 1949 **97** 44
V. Effect of hydrogen peroxide and irradiated sea water on respiration of sea urchin sperm and eggs ..... 1949 **97** 51
**Barron, E. S. G.** *See* A. K. Parpart (abstract) ..... 1947 **93** 199
**Barth, L. G.** *See* A. Goldin ..... 1941 **81** 177
**Barton, Jay, II.** Specificity of desoxyribonucleases and their cytochemical application (abstract) ..... 1949 **97** 267
A new DNA fraction of the cell nucleus (abstract) ..... 1951 **101** 236
The action of DN-ase on cell nuclei ..... 1952 **103** 319
Nucleoprotein complexes of sperm nuclei (abstract) ..... 1952 **103** 314
**Battley, Edwin H., and Irving M. Klotz.** Interaction of sodium and potassium ions with hemoglobin and with hemerythrin (abstract) ..... 1951 **101** 215
**Battley, E. H.** *See* Albert Frenkel (abstract) ..... 1949 **97** 269
*See* Albert Frenkel ..... 1950 **99** 157
**Baylor, E. R.** Cardiac pharmacology of the cladoceran, Daphnia. 1942 **83** 165
**Baylor, Martha Barnes.** *See* Elizabeth Foster ..... 1947 **93** 114
**Bayors, Winifred M.** *See* Charles G. Wilber ..... 1947 **93** 99
**Beams, H. W.** Some effects of centrifuging upon protoplasmic streaming in Elodea ..... 1949 **96** 246
**Beaz, Silvio.** *See* Robert Chambers (abstract) ..... 1947 **93** 226
**Beers, C. Dale.** Tillina magna: Micronuclear number, excystment and vitality in diverse clones; capabilities of amicronucleate races ..... 1946 **91** 256
The ciliates of Strongylocentrotus drobachiensis: incidence, distribution in the host, and division ..... 1948 **94** 99
Excystment in the ciliate, Bursaria truncatella ..... 1948 **94** 86
**Belda, W. H.** *See* D. M. Pace ..... 1944 **86** 146
*See* D. M. Pace ..... 1944 **87** 138
**Benaglia, Angelo E.** *See* Milton Levy (abstract) ..... 1950 **99** 323
**Benedict, D.** *See* A. E. Navez (abstract) ..... 1941 **81** 289
**Benesch, Reinhold, and Ruth E. Benesch.** Carbonic anhydrase and calcification in the fiddler crab, Uca (abstract) ..... 1951 **101** 236
Polarographic investigation of the reaction between organic mercury compounds and thiols (abstract) ..... 1951 **101** 196
**Benesch, Ruth E., and Reinhold Benesch.** Hemolysis of sheep erythrocytes by organic mercury compounds (abstract) ..... 1951 **101** 204
**Benson, Eleanore.** *See* Daniel Mazia (abstract) ..... 1948 **95** 250
**Benzer, Paul.** *See* Gerrit Bevelander ..... 1948 **94** 176

**Berg, William E.** Lytic effects of sperm extracts on the eggs of Mytilus edulis ..... 1950 98 128
**Berg, W. E., and Phyllis B. Kutsky.** Physiological studies of differentiation in Mytilus edulis. I. Oxygen uptake of isolated blastomeres and polar lobes ..... 1951 101 47
**Berg, W. E.** *See* D. M. Whitaker ..... 1944 86 125
**Berger, C. A.** Experimental studies on the cytology of Allium cepa (abstract) ..... 1944 87 163
**Berkeley, Edmund.** Spindle development and behavior in the giant amoeba ..... 1948 94 169
**Berman, Jack.** *See* Arnold Lazarow (abstract) ..... 1947 93 219
*See* Arnold Lazarow (abstract) ..... 1948 95 276
**Berman, Leonora.** *See* Rudolph Kempton (abstract) ..... 1950 99 346
**Bernstein, G. S.** Sperm agglutinins in the egg jelly of the frogs Rana pipiens and R. clamitans (Latreille) (abstract) ..... 1952 103 285
**Bernstein, Maurice H.** Ribonuclease activity in development of the sea urchin Arbacia punctulata (abstract) ..... 1949 97 255
**Berrill, N. J.** A new method of reproduction in Obelia ..... 1948 95 94
The life cycle of Aselomaris michaeli, a new gymnoblastic hydroid ..... 1948 95 289
Form and growth in the development of a scyphomedusa ..... 1949 96 283
**Bertholf, L. M., and S. O. Mast.** Metamorphosis in the larva of the tunicate Styela partita (abstract) ..... 1944 87 166
**Beutner, R.** *See* T. Cunliffe Barnes (abstract) ..... 1948 95 281
*See* T. C. Barnes (abstract) ..... 1949 97 268
*See* T. C. Barnes (abstract) ..... 1950 99 314
**Bevelander, Gerrit, and Paul Benzer.** Calcification in marine molluscs: Introductory observations ..... 1948 94 176
**Bevelander, Gerrit.** Calcification in molluscs: II. The localization of $Ca^{45}$ and $P^{32}$ in the mantle and regenerating shell (abstract) ..... 1951 101 197
Calcification in molluscs: III. Intake and deposition of $Ca^{45}$ and $P^{32}$ in relation to shell formation ..... 1952 102 9
**Birmingham, L.** Regeneration in the early zoöid of Amaroucium constellatum (abstract) ..... 1941 81 287
**Bishop, David W.** Oxygen consumption of fox sperm ..... 1942 83 353
Chromatographic analysis of fertilizin from the sand dollar, Echinarachnius parma (abstract) ..... 1951 101 215
**Bissell, Harold B.** *See* Claude A. Villee (abstract) ..... 1947 93 213
**Black, Edgar C.** *See* F. E. J. Fry ..... 1947 92 217
**Black, Virginia S.** Changes in density, weight, chloride content and swimbladder gas in the killifish (Fundulus heteroclitus), in fresh and in sea water ..... 1948 95 83
**Black, V. S.** *See* F. E. J. Fry ..... 1947 92 217
**Blatt, William.** *See* Peter R. Morrison ..... 1951 101 171
**Blauch, Bertina M.** *See* P. W. Whiting (abstract) ..... 1948 95 243
**Bliss, Alfred F.** The extraction of purified squid "visual purple" (abstract) ..... 1948 95 242

Reversible enzymic reduction of retinene to vitamin A (abstract) ..... 1949 97 221
Action of alcohol dehydrogenase on vitamin A (abstract) .... 1950 99 330
**Bliss, Dorothy E.** Endocrine control of metabolism in the land crab, Gecarcinus lateralis (Fréminville): I. Differences in the respiratory metabolism of sinus glandless and eyestalkless crabs ..... 1953 104 275
**Bliss, Dorothy E., and John H. Welsh.** The neuro-secretory system of brachyuran Crustacea ..... 1952 103 157
**Bloch, R.** Irreversible differentiation in certain plant cell lineages (abstract) ..... 1947 93 215
**Blum, Harold F.** Ultraviolet radiation effects on rate of cell division of Arbacia eggs (abstract) ..... 1949 97 232
**Blum, H. F., and Margie M. Mathews.** Photorecovery after ultraviolet radiation in amphibian larvae (abstract) ..... 1950 99 330
**Blum, H. F., Charlotte T. Pope, Judith P. Price and Ralph Witmer.** Photochemical inactivation of chymotrypsin (abstract) ..... 1950 99 317
**Blum, H. F., J. Courtland Robinson and Gordon M. Loos.** Loci of action of ultraviolet and X-ray radiation, and of photorecovery, in the egg and sperm of Arbacia (abstract). 1950 99 342
**Blumenthal, Gertrude.** *See* Daniel Mazia (abstract) ..... 1948 95 250, 283
**Blumenthal, H. T.** *See* Leo Loeb ..... 1943 84 1
**Bodenstein, Dietrich.** Hormones and tissue competence in the development of Drosophila ..... 1943 84 34
Factors influencing growth and metamorphosis of the salivary gland in Drosophila ..... 1943 84 13
The induction of larval molts in Drosophila ..... 1944 86 113
Investigation on the locus of action of DDT in flies (Drosophila) ..... 1946 90 148
Developmental relations between genital ducts and gonads in Drosophila ..... 1946 91 288
**Bodine, Joseph Hall.** Effects of sulfanilamide upon the oxygen uptake of mitotically active and blocked grasshopper embryos 1950 98 94
**Bodine, J. H., and T. H. Allen.** Enzymes in ontogenesis (Orthoptera). XIX. Protyrosinase and morphological integrity of grasshopper eggs ..... 1941 81 388
**Bodine, J. H., and Theodore Newton Tahmisian.** The development of an enzyme (tyrosinase) in the parthenogenetic egg of the grasshopper, Melanoplus differentialis ..... 1943 85 157
**Bodine, J. H., and Laurence Rockwell Fitzgerald.** Effect of urea, thiourea, phenylthiourea, and thiouracil on the oxygen consumption of blocked and active embryonic cells ..... 1949 96 1
**Bodine, J. H., and Kiao-Hung Lu.** Endogenous oxygen uptake and specificity of embryonic intracellular constituents ..... 1951 100 153
**Bodine, J. H., Kiao-Hung Lu and William L. West.** Reduction of triphenyltetrazolium chloride by mitotically active and blocked embryonic cells ..... 1952 102 16

**Bodine, J. H., and W. L. West.** Carbohydrate metabolism of the developing egg and embryo ..... 1953 **104** 1
**Boettiger, Edward G., and Edwin Furshpan.** Observations on the flight motor of Diptera (abstract) ..... 1950 **99** 346
The mechanics of flight movements in Diptera ..... 1952 **102** 200
**von Bonde, Cecil.** The external development of the banded dogfish, or pofadderhaai, Haploblepharus edwardsii (M & H) .. 1945 **88** 1
**von Bonde, Cecil.** Stages in the development of the picked or spiny dogfish, Squalus acanthias (Linn.) ..... 1945 **88** 220
**Bonner, John Tyler.** Observations on polarity in the slime mold, Dictyostelium discoideum ..... 1950 **99** 143
**Bonner, J. T., Chambless Johnston and Harold C. Urchel.** Observations on the development of the slime bacterium, Chondromyces crocata (abstract) ..... 1951 **101** 194
**Bonner, J. T., and Evelyn B. Frascella.** Variations in cell size during the development of the slime mold, D. discoideum ... 1953 **104** 297
**Bonner, J. T.** *See* Miriam K. Slifkin ..... 1952 **102** 273
**Borbiro, M., and A. Szent-Györgyi.** On the relation between tension and ATP in cross-striated muscle ..... 1949 **96** 162
**Borei, Hans.** Respiration of oöcytes, fertilized and unfertilized eggs from Psammechinus and Asterias ..... 1948 **95** 124
Independence of post-fertilization respiration in the sea urchin egg from the level of respiration before fertilization ..... 1949 **96** 117
**Borei, Hans, and Siguar Lybing.** Temperature coefficients of respiration in Psammechinus eggs ..... 1949 **96** 107
**Borei, Hans, and Charles B. Metz.** The cytochrome system of starfish sperm (abstract) ..... 1951 **101** 216
**Bovee, Eugene C.** Studies on the thermal death of Hyalella azteca (Saussure) ..... 1949 **96** 123
**Bowden, Bernard J.** Some observations on a luminescent freshwater limpet from New Zealand ..... 1950 **99** 373
**Bowman, Thomas E.** Chromatophorotropins in the central nervous organs of the crab, Hemigrapsus oregonensis ..... 1949 **96** 238
**Boyce, Steve G.** An ecological study of coastal plants on Cape Cod ..... 1952 **103** 296
**Boyer, P. D.** Studies on the distribution, potassium activation, and mechanism of pyruvic phosphoferase (abstract) ..... 1952 **103** 314
**Boyle, Marie, and M. S. Doty.** Tolerance of stenohaline forms to diluted sea water (abstract) ..... 1949 **97** 232
**Brachet, J.** Report on Lalor Fellowship Research ..... 1947 **93** 218
**Brackett, F. S.** Time course studies of photosynthesis and respiration in unicellular algae, using the platinum electrode, with time selection (abstract) ..... 1949 **97** 271
**Bradley, H. C.** *See* B. Bailey ..... 1942 **83** 129
**Bradley, Walter O.** The effects of certain anti-thyroid drugs on the uptake of radioactive iodine by the frog thyroid ..... 1951 **101** 62
**von Brand, Theodor.** Physiological observations upon a larval Eustrongylides:
II. The aerobic respiration ..... 1942 **82** 1

IV. Influence of temperature, pH and inorganic ions upon the oxygen consumption ..... 1943 84 148
XI. Influence of oxygen tension on the aerobic and post-anaerobic oxygen consumption ..... 1947 92 162
**von Brand, T., and Benjamin Mehlman.** Relations between pre- and post-anaerobic oxygen consumption and oxygen tension in some freshwater snails ..... 1953 104 301
**von Brand, T., and Norris W. Rakestraw.** Decomposition and regeneration of nitrogenous organic matter in sea water. IV. Interrelationship of various stages ..... 1941 81 63
**von Brand, T., Harry D. Baernstein and Benjamin Mehlman.** Studies on the anaerobic metabolism and the aerobic carbohydrate consumption of some freshwater snails ..... 1950 98 266
**von Brand, T., M. O. Nolan and Elizabeth Rogers Mann.** Observations on the respiration of Australorbis glabratus and some other aquatic snails ..... 1948 95 199
**von Brand, T., Norris W. Rakestraw and J. William Zabor.** Decomposition and regeneration of nitrogenous organic matter in sea water. V. Factors influencing the length of the cycle; observations upon the gaseous and dissolved organic nitrogen ..... 1942 83 273
**von Brand, Theodor.** *See* Benjamin Mehlman ..... 1951 100 199
*See* Norris W. Rakestraw ..... 1947 92 110
*See* W. Gardner Lynn ..... 1945 88 112
**Brandt, C. L.** *See* A. C. Giese ..... 1952 103 336
**Brewer, Philip A.** *See* Daniel Mazia ..... 1953 104 57
**Bridgman, Anna Josephine.** Notes on growth and cystment in Dileptus binucleatus (abstract) ..... 1950 99 348
Further studies on growth and the processes of encystment and excystment in Dileptus (abstract) ..... 1951 101 216
**Brooks, Matilda Moldenhauer.** Further interpretations of the effects of CO and CN on oxidations in living cells (abstract) 1941 81 284
Methylene blue, potassium cyanide and carbon monoxide as indicators for studying the oxidation-reduction potentials of developing marine eggs ..... 1943 84 164
Effect of redox dyes on development of marine eggs (abstract) 1949 97 255
Oxidation-reduction dyes and "lithium larvae" (abstract) ..... 1951 101 217
**Brooks, S. C.** Intake and loss of ions by living cells:
I. Eggs and larvae of Arbacia punctulata and Asterias forbesi exposed to phosphate and sodium ions ..... 1943 84 213
II. Early changes of phosphate content of Fundulus eggs ..... 1943 84 226
*See* E. L. Chambers (abstract) ..... 1948 95 252, 263
**Brooks, S. C., and E. L. Chambers.** Penetration of radioactive phosphate into the eggs of Strongylocentrotus purpuratus, S. franciscanus and Urechis caupo (abstract) ..... 1948 95 262
**Brown, A. H., E. W. Fager and H. Gaffron.** A photosynthetic intermediate (abstract) ..... 1948 95 284
**Brown, Frances C.** *See* Dietrich C. Smith ..... 1952 102 278

**Brown, Frank A., Jr.** Studies on the physiology of Uca red chromatophores ..... 1950 98 218
**Brown, Frank A., Jr., and Grover C. Stephens.** Studies of the daily rhythmicity of the fiddler crab, Uca. Modifications by photoperiod ..... 1951 101 71
**Brown, Frank A., Jr., and Gwen M. Jones.** Ovarian inhibition by a sinus gland principle in the fiddler crab ..... 1949 96 228
**Brown, Frank A., Jr., and Lorraine M. Saigh.** The comparative distribution of two chromatophorotropic hormones (CDH and CBLH) in crustacean nervous systems ..... 1946 91 170
**Brown, Frank A., Jr., and O. Cunningham.** Upon the presence and distribution of a chromatophorotropic principle in the central nervous system of Limulus ..... 1941 81 80
**Brown, Frank A., Jr., H. Marguerite Webb and Robert C. Graves.** A persistent tidal rhythm in the fiddler crab, Uca pugnax (abstract) ..... 1952 103 297
**Brown, Frank A., Jr., Margaret N. Hines and Milton Fingerman.** Hormonal regulation of the distal retinal pigment of Palaemonetes vulgaris ..... 1952 102 212
**Brown, Frank A., Jr., Milton Fingerman and Margaret N. Hines.** Hormones controlling the distal retinal pigment of P. vulgaris (abstract) ..... 1951 101 217
**Brown, Frank A., Jr., Muriel I. Sandeen and Milton Fingerman.** Modification of the tidal rhythm of Uca by tidal difference and by illumination (abstract) ..... 1952 103 297
**Brown, Frank A., Jr.** *See* H. Marguerite Webb (abstract) ..... 1951 101 231, 1952 103 310
*See* Muriel I. Sandeen (abstract) ..... 1951 101 228, 1952 103 307
**Browne, Marie J., Marjorie W. Pitts and Robert F. Pitts.** Alkaline phosphatase activity in kidneys of glomerular and aglomerular marine teleosts ..... 1950 99 152
**Brownell, K. A., I. Moore and Sr. Francis Jerome.** Effect of adrenal preparations on tumor growth ..... 1952 102 226
**Brumm, Ann.** *See* Leon S. Ciereszko (abstract) ..... 1951 101 207
**Bryant, Shirley H., and Julian M. Tobias.** Propagated changes in light scattering accompanying activity in nerve (abstract) 1951 101 205
**Buck, John B.** The click mechanism of elaterid beetles (abstract) 1944 87 165
**Buck, John B., and Margaret L. Keister.** Experiments on spiracles (abstract) ..... 1950 99 315
Physiological studies on the mechanism of action of DDT in insects (abstract) ..... 1947 93 189
Respiration and water loss in the adult blowfly, Phormia regina, and their relation to the physiological action of DDT ..... 1949 97 64
**Buck, J. B.** *See* Margaret L. Keister (abstract) ..... 1949 97 267
*See* Margaret L. Keister ..... 1949 97 323
**Buckner, Annette J.** *See* Albert S. Perry ..... 1953 104 426
**Budington, Robert A.** The ciliary transport system of Asterias forbesi ..... 1942 83 438

**Bullock, Jane A.** *See* F. R. Hunter (abstract) ..... 1948 95 255
*See* F. R. Hunter ..... 1949 97 57
**Bullock, Theodore H.** Oscillographic studies on the giant nerve fiber system in Lumbricus (abstract) ..... 1944 87 159
Non-integrative synapses (abstract) ..... 1948 95 249
**Bullock, T. H., Melvin Cohen and Dyrel Faulstick.** Effect of stretch on conduction in single nerve fibers (abstract) ..... 1950 99 320
**Bump, Gardiner.** *See* Leonard B. Clark ..... 1944 87 134
**Bumpus, Dean F.** *See* G. L. Clarke ..... 1943 85 201
**Buno, W., and Robert Chambers.** Direct determination of internal hydrostatic pressure of Fundulus egg (abstract) ..... 1947 93 190
**Burbanck, Madeline P.** *See* W. D. Burbanck (abstract) ..... 1947 93 190
**Burbanck, William D.** Growth of pedigreed strains of Paramecium caudatum and P. aurelia on a non-living medium (abstract) . 1950 99 353
**Burbanck, W. D., and Madeline P. Burbanck.** Autogamy of Paramecium aurelia (stock 51.7) grown on non-living media (abstract) ..... 1951 101 205
**Burbanck, W. D., John P. Edwards and Madeline P. Burbanck.** Toleration of lowered oxygen tension by cave and stream crayfish (abstract) ..... 1947 93 190
**Burbanck, W. D.** *See* George C. Whiteley, Jr. (abstract) ..... 1949 97 250
**Burger, J. Wendell.** Some effects of androgens on the adult male Fundulus ..... 1942 82 233
**Burk, Dean.** *See* Silvio Fiala (abstract) ..... 1948 95 282
**Burns, Jean, and D. Eugene Copeland.** Chloride excretion in the head region of Fundulus heteroclitus ..... 1950 99 381
**Burt, Agnes Sanxay.** Neurulation in mechanically and chemically inhibited Amblystoma ..... 1943 85 103
**Burt, Richard L.** Narcosis and cell division in Colpoda steinii ... 1945 88 12
**Busch, H. L.** *See* B. G. Anderson ..... 1941 81 119
**Butler, Elmer G.** Reversal of polarity in limbs of Urodela larvae (abstract) ..... 1949 97 232
**Butler, Philip A.** Gametogenesis in the oyster under conditions of depressed salinity ..... 1949 96 263
**Butros, Joseph M.** The action of saponin and its non-hemolytic modification on growth ..... 1951 100 1
On the relationship between cleavage block by respiratory inhibitors and viscosity changes in Hyanassa eggs (abstract) 1952 103 297
**Butterfield, Winifred.** *See* Charles B. Metz ..... 1951 101 99
**Byers, Helen L.** Failure to obtain "cyto-fertilizin" from Arbacia eggs (abstract) ..... 1951 101 218

## C

**Cable, R. M., and A. V. Hunninen.** Studies on Deropristis inflata (Molin); its life history and affinities to trematodes of the family Acanthocolpidae ..... 1942 82 292
**Cable, R. M.** Studies on the life history of Siphodera vinaledwardsii, a trematode parasite of the toadfish (abstract) ..... 1941 81 279

**Carlson, J. Gordon.** Protoplasmic viscosity changes in different regions of the grasshopper neuroblast during mitosis..... 1946 **90** 109
**Carlson, J. Gordon, Nyra G. Harrington and Mary Esther Gaulden.** Mitotic effects of prolonged irradiation with low-intensity gamma rays on the Chortophaga neuroblast..... 1953 **104** 313
**Carlson, L. D.** Enzymes in ontogenesis (Orthoptera). XVIII. Esterases in the grasshopper egg..... 1941 **81** 375
**Carriker, Melbourne Romaine.** Observations on the functioning of the alimentary system of the snail, Lymnea stagnalis appressa (Say)..... 1946 **91** 88
**Chadwick, Leigh E.** The respiratory quotient of Drosophila in flight..... 1947 **93** 229
Effects of atmospheric pressure and composition on the flight of Drosophila..... 1949 **97** 115
Stroke amplitude as a function of air density in the flight of Drosophila..... 1951 **100** 15
**Chadwick, Leigh E., J. B. Lovell and V. E. Egner.** The effect of various suspension media on the activity of cholinesterase from flies..... 1953 **104** 323
**Chaet, Alfred B.** Heat death in Phascolosoma (abstract)..... 1951 **101** 206
The action of heparin preparations on cells and tissues (abstract)..... 1952 **103** 281
**Chaet, Alfred B.** *See* L. V. Heilbrunn (abstract)..... 1952 **103** 303
**Chambers, Edward L.** Accumulation of phosphate and synthesis of adenosinetriphosphate in fertilized sea urchin eggs (abstract)..... 1949 **97** 225
Uptake and loss of $K^{42}$ in fertilized and unfertilized eggs of Strongylocentrotus purpuratus and Arbacia punctulata (abstract)..... 1949 **97** 251
**Chambers, E. L., and Thomas Mende.** The role of phosphagen in fertilization of the sea urchin egg (abstract)..... 1950 **99** 316
**Chambers, E. L., A. Whiteley, R. Chambers and S. C. Brooks.** Distribution of radioactive phosphate in the eggs of the sea urchin, Lytechinus pictus (abstract)..... 1948 **95** 263
**Chambers, E. L., W. White, Nylan Jeung and S. C. Brooks.** Penetration and effects of low temperature and cyanide on penetration of radioactive potassium into eggs of Strongylocentrotus purpuratus and Arbacia punctulata (abstract).... 1948 **95** 252
**Chambers, E. L.** *See* Chien-Yuan Kao (abstract)..... 1951 **101** 210
*See* Robert Chambers (abstract)..... 1949 **97** 283, 1951 **101** 206
*See* S. C. Brooks (abstract)..... 1948 **95** 262
**Chambers, Robert.** The shape of oil drops injected into the axoplasm of the giant nerve of the squid (abstract)..... 1947 **93** 191
Rhythmic alterations in certain properties of fertilized Arbacia eggs (abstract)..... 1949 **97** 233
**Chambers, Robert, and Chien-Yuan Kao.** Micro-injection of calcium chloride into the giant nerve axon of the squid (abstract)..... 1950 **99** 344

The physical state of the axoplasm *in situ* in the nerve of the squid mantle (abstract) ..... 1951 101 206
**Chambers, R., and E. L. Chambers.** Nuclear and cytoplasmic interrelations in the fertilization of the Asterias egg ..... 1949 96 270
**Chambers, R., and Silvio Beaz.** A method for sub-cooling cells under microscopic observation at room temperature (abstract) ..... 1947 93 226
**Chambers, R., E. L. Chambers and Chien-Yuan Kao.** The internal hydrostatic pressure of the unfertilized activated Fundulus egg exposed to various experimental conditions (abstract) ..... 1951 101 206
**Chambers, R.** *See* Chien-Yuan Kao (abstract) ..... 1951 101 210
*See* E. L. Chambers (abstract) ..... 1948 95 263
*See* Maria A. Rudzinska ..... 1951 100 49
*See* W. Buno (abstract) ..... 1947 93 190
**Chance, Britton.** Oxidase activity–light absorption relationships in the cytochrome system of heart muscle preparations (abstract) ..... 1950 99 318
**Chase, Aurin M.** Effect of azide on Cypridina luciferin (abstract) ..... 1941 81 283
Observations on luminescence in Mnemiopsis (abstract) ..... 1941 81 296
Effect of hydrogen ion concentration and of certain buffer systems upon the luminescent reaction of Cypridina luciferin and luciferase (abstract) ..... 1947 93 204
On the combining weight of Cypridina luciferin (abstract) ... 1948 95 263
Inactivation of Cypridina luciferase by heat (abstract) ..... 1949 97 256
On the nature of Cypridina luciferin (abstract) ..... 1950 99 326
**Chen, Tze-Tuan.** Temporary pair formation in Paramecium bursaria ..... 1946 91 112
**Cheney, Ralph Holt.** Deformation delay in Arbacia ova centrifuged in caffeine solutions (abstract) ..... 1947 93 191
Caffeine effects on fertilization and development in Arbacia punctulata ..... 1948 94 16
Stratification and deformation of Arbacia punctulata eggs centrifuged in caffeine solutions ..... 1949 96 70
Theobromine and theophylline effects upon rate and form of Arbacia development (abstract) ..... 1949 97 234
Viability of Arbacia gametes in relation to time (abstract) ... 1950 99 354
Behavior of cortical granules in methylated xanthine effects (abstract) ..... 1951 101 207
**Child, C. M.** Oxidation-reduction indicator patterns in regeneration of the foreleg and tail of Triturus torosus larvae ..... 1951 101 121
Indicator gradient patterns in oöcytes and early developmental stages of echinoderms: A reexamination ..... 1953 104 12
**Chinn, Betty.** *See* William R. Amberson (abstract) ..... 1949 97 231
**Churney, Leon.** The osmotic properties of the nucleus ..... 1942 82 52
**Ciereszko, Leon S.** An application of ion exchange resins to the isolation of amino acids from biological material (abstract). 1951 101 194

Studies on the non-saponifiable fraction of lipid material from marine animals: I. (abstract) ..... 1951 101 237
II. (abstract) ..... 1952 103 315
**Ciereszko, Leon S., and Charles R. Crane, Jr.** Studies on the poly-D-glutamic acid of Bacillus subtilis NRRL-571 (abstract) ..... 1952 103 291
**Ciereszko, Leon S., M. L. Karnovsky and Ann Brumm.** Urea adduct formation as a means of separating components of lipid mixtures (abstract) ..... 1951 101 207
**Claff, C. Lloyd.** Induced morphological changes in Tetrahymena vorax (abstract) ..... 1947 93 216
**Claff, C. L., and T. N. Tahmisian.** Cartesian diver technique: A simplified mixing method in a new type of Cartesian diver vessel (abstract) ..... 1948 95 253
**Claff, C. L., V. C. Dewey and G. W. Kidder.** Feeding mechanisms and nutrition in three species of Bresslaua ..... 1941 81 221
**Claff, C. L.** *See* P. F. Scholander.. 1951 101 178, 1952 102 157, 178, 185
**Clapp, Mary Jeanne.** *See* C. Haywood ..... 1942 83 363
**Clark, Arnold M., and C. J. Mitchell.** Effects of X-rays upon haploid and diploid embryos of Habrobracon ..... 1952 103 170
**Clark, A. M., and D. S. Grosch.** Fat cell size in the mutant small-wings of Habrobracon (abstract) ..... 1948 95 264
**Clark, Arnold M.** *See* D. S. Grosch (abstract) ..... 1949 97 237, 1950 99 359
**Clark, Leonard B.** Factors in the lunar cycle which may control reproduction in the Atlantic palolo (abstract) ..... 1941 81 278
**Clark, L. B., and Gardiner Bump.** X-rays and the reproductive cycle in ring-necked pheasants ..... 1944 87 134
**Clarke, George L.** Poisoning and recovery in barnacles and mussels ..... 1947 92 73
**Clarke, G. L., E. Lowe Pierce and Dean F. Bumpus.** The distribution and reproduction of Sagitta elegans on Georges Bank in relation to hydrographical conditions ..... 1943 85 201
**Clarke, George L.** *See* Elizabeth Foster ..... 1947 93 114
**Claude, A.** Chemical composition of mitochondria and secretory granules (program title only) ..... 1941 81 286
**Clement, Anthony C.** Experiments on germinal localization in Ilyanassa (abstract) ..... 1947 93 191
The mesoderm question in lobeless Ilyanassa eggs (abstract). 1951 101 218
**Clowes, G. H. A.** Inhibition of cleavage in Arbacia eggs and of phosphorylation in cell-free egg extracts by nitro- and halo-phenols (abstract) ..... 1949 97 234
**Clowes, G. H. A., A. K. Keltch and C. P. Walters.** On a dinitro-cresol-resistant phosphorylating mechanism present in cell-free homogenates of unfertilized Arbacia eggs (abstract) 1951 101 219
On the effects exerted by calcium chloride and by freezing and thawing on the anaerobic, dinitro-cresol-resistant phosphorylating mechanism of homogenates of Arbacia eggs (abstract) ..... 1951 101 220

**Clowes, G. H. A., A. K. Keltch, Philipp Strittmatter and C. P. Walters.** Action of dinitro-carvacrol and dinitro-thymol on respiration of fertilized Arbacia and Mactra eggs and certain mammalian tissues and cell-free, particulate, phosphorylating systems (abstract) ..... 1950 **99** 335
**Clowes, G. H. A.** *See* A. K. Keltch (abstract) ..... 1947 **93** 195, 196, 1949 **97** 242
*See* A. K. Keltch (abstract) ..... 1950 **99** 334, 1951 **101** 220
*See* Philipp Strittmatter (abstract) ..... 1950 **99** 333
**Coe, Wesley R.** Sexual phases in wood-boring mollusks ..... 1941 **81** 168
Development of the primary gonads and differentiation of sexuality in Teredo navalis and other pelecypod mollusks ..... 1943 **84** 178
Nutrition and sexuality in protandric gastropods of the genus Crepidula ..... 1948 **94** 158
**Coe, W. R., and Denis L. Fox.** Biology of the California sea mussel, Mytilus californianus. III. Environmental conditions and rate of growth ..... 1944 **87** 59
**Cohen, Adolph I.** Studies on the pigmentation changes during reconstitution in Tubularia ..... 1952 **102** 91
**Cohen, Arthur.** Apyrase activity of marine invertebrate muscle (abstract) ..... 1948 **95** 281
**Cohen, Isadore.** Fixation and staining of plant nuclei in lacto-Sudan black-b (abstract) ..... 1948 **95** 253
Toxicity responses of dividing nuclei of Allium, as demonstrated with the Sudan black-b technique (abstract) ..... 1949 **97** 235
Use of Sudan black-b in study of heterochromatin in certain plant nuclei (abstract) ..... 1949 **97** 236
**Cohen, Melvin.** *See* Theodore Holmes Bullock (abstract) ..... 1950 **99** 320
**Cohen, Seymour S.** Studies on the distribution of the oxidative pathway of glucose-6-phosphate utilization (abstract) ..... 1950 **99** 369
Enzymes of a ribose-forming pathway during the early embryonic development of Chactopterus (abstract) ..... 1951 **101** 237
**Cole, K. S.** *See* R. Guttman (abstract) ..... 1941 **81** 277
**Collier, Jane G.** Relations between metabolism and the morphogenesis during regeneration in Tubifex tubifex I ..... 1947 **92** 167
**Colwin, Arthur L.** Effect of lithium chloride and calcium-low sea water on development of the otolith of Molgula manhattensis (abstract) ..... 1949 **97** 236
Developmental potencies of the early blastomeres of the egg of Saccoglossus (Dolichoglossus) kowalevskyi (abstract) .. 1949 **97** 237
**Colwin, Arthur L., and Laura Hunter Colwin.** On the nature of the membranes in the egg of Saccoglossus kowalevskyi: effects of certain chemical solutions (abstract) ..... 1951 **101** 221
**Colwin, Arthur L.** *See* Laura Hunter Colwin (abstract) ..... 1949 **97** 237
**Colwin, Laura Hunter.** Note on spawning of the holothurian, Thyone briareus (Lesueur) ..... 1948 **95** 296
Fertilization reaction in the egg of Saccoglossus kowalevskyi (abstract) ..... 1949 **97** 237

**Colwin, Laura Hunter, and Arthur L. Colwin.** Changes of shape and position of the egg with reference to membranes following fertilization in Saccoglossus kowalevskyi L. (abstract).. 1951 101 221
**Colwin, Laura Hunter.** *See* Arthur L. Colwin (abstract)..... 1949 97 237
**Connelly, C. M.** The oxygen consumption of squid nerve (abstract)..... 1952 103 315
**Cookson, B. A., and Floyd Wiercinski.** Methods of producing travelling contraction nodes in adult frog skeletal muscle fibers (abstract)..... 1949 97 226
**Cooper, Octavia.** *See* Eric G. Ball (abstract)..... 1947 93 189, 20
*See* Eric G. Ball (abstract)..... 1949 97 231
*See* Eric G. Ball (abstract)..... 1950 99 317
*See* C. F. Strittmatter (abstract)..... 1952 103 317
**Cooperstein, S. J., and Arnold Lazarow.** Comparative studies on the cytochrome oxidase and succinic dehydrogenase content of toadfish (Opsanus tau) and rat kidneys (abstract)..... 1950 99 356
Cytochrome oxidase and succinic dehydrogenase content of squid axoplasm and other nervous tissue (abstract)..... 1950 99 356
Cytochrome oxidase and succinic dehydrogenase content of nervous tissue of the squid, Loligo pealii..... 1951 100 159
Reduction of janus green by isolated enzyme systems (abstract) 1950 99 321
**Cooperstein, S. J.** *See* Arnold Lazarow (abstract)..... 1950 99 322, 361
*See* Arnold Lazarow..... 1951 100 191
*See* B. Eichel (abstract)..... 1948 95 239
*See* W. W. Wainio (abstract)..... 1947 93 214
**Copeland, D. Eugene.** The interrelation of the chloride excreting cell (gill) and the pseudobranch of Fundulus heteroclitus (abstract)..... 1947 93 222
The cytological basis of salt excretion from the gills of Fundulus heteroclitus (abstract)..... 1947 93 192
**Copeland, D. Eugene.** *See* Jean Burns..... 1950 99 381
**Corliss, John O.** *See* Horace W. Stunkard..... 1951 101 319
**Cornman, Ivor.** Characteristics of the acceleration of Arbacia egg cleavage in hypotonic sea water (abstract)..... 1941 81 288
Retardation of Arbacia egg cleavage by dinoflagellate-contaminated sea water ("red tide") (abstract)..... 1947 93 205
Acceleration of cleavage of Arbacia eggs by hypotonic sea water 1943 84 244
The effects of podophyllin on the maturation and cleavage of the starfish egg (abstract)..... 1947 93 214
Inhibition of Arbacia egg cleavage by podophyllin and related substances (abstract)..... 1947 93 192
Lactones as mitotic poisons, tested on sea urchin eggs (abstract)..... 1948 95 252
Inhibition of sea urchin egg cleavage by a series of substituted carbamates (abstract)..... 1948 95 244
Dividing Arbacia eggs as test objects for the effects of cortisone and desoxycortico-sterone on cell division, potassium permeability and glucose utilization (abstract)..... 1950 99 357

Selective damage to fibroblasts by desoxycorticosterone in cultures of mixed tissues (abstract) ... 1950 99 328
Temperature alteration of carbamate narcosis of dividing Arbacia eggs (abstract) ... 1950 99 338
Specificity of steroids which inhibit heart beat (abstract) ... 1951 101 199
**Cornman, Ivor, and Edward F. Rogers.** Alleviation of the antimitotic effect of rotenone by alpha-tocopherol (abstract) ... 1951 101 208
**Cornman, Ivor, and Margaret Evans Cornman.** The effects of different halogenated alkyl amines on the division of sea urchin eggs ... 1952 103 44
**Cornman, Ivor, and Edward F. Rogers.** Chemical characteristics of rotenone antagonists as determined by effects on dividing sea urchin eggs (abstract) ... 1952 103 298
**Cornman, Ivor.** *See* Edward F. Rogers (abstract) ... 1951 101 227
**Cosgrove, W. B.** *See* R. P. Hall ... 1944 86 31
**Costello, Donald P.** The swimming of Leptosynapta ... 1946 90 93
The relation of the plasma membrane, vitelline membrane and jelly in the egg of Nereis limbata (abstract) ... 1948 95 264
Spiral cleavage (*see* Erratum 1948 95 361) ... 1948 95 265
Gross morphological effects of low temperature on fertilized eggs of Chaetopterus (abstract) ... 1949 97 256
**Costello, D. P., and Catherine Henley.** Abnormalities of mitosis in tailtips of Triturus torosus (abstract) ... 1947 93 205
Heteroploidy in Triturus torosus. II. The incidence of chromosomal variations in shipped larvae ... 1950 99 386
**Costello, D. P., Catherine Henley and Donald E. Kent.** Effect of $P^{32}$ on mitosis in Chaetopterus eggs (abstract) ... 1952 103 298
**Costello, D. P.** *See* Catherine Henley (abstract) ... 1947 93 207
*See* Catherine Henley (abstract) ... 1949 97 258
**Couillard, Pierre.** The fertilization inhibitor in the blood cells of Arbacia (abstract) ... 1952 103 299
**Crampton, Henry E.** *See* Grace S. Forbes ... 1942 82 26
*See* Grace S. Forbes ... 1942 83 283
**Crane, Charles R., Jr.** *See* Leon S. Ciereszko (abstract) ... 1952 103 291
**Crane, Robert K.** The distribution of phosphorus in the unfertilized egg of Arbacia punctulata (abstract) ... 1947 93 192
**Crane, Robert K., E. G. Ball and A. K. Solomon.** The incorporation of carbon dioxide into organic linkage by retina (abstract) ... 1948 95 248
**Crane, Sheldon.** *See* Denis L. Fox ... 1942 82 284
**Crawford, J. D.** *See* A. E. Navez (abstract) ... 1941 81 289
**Crescitelli, Frederick.** A note on the absorption spectra of the blood of Eudistylia gigantea and of the pigment in the red corpuscles of Cucumaria miniata and Molpadia intermedia ... 1945 88 30
**Croasdale, Hannah.** *See* Mary D. Rogick ... 1949 96 32
**Cross, Helen.** *See* Lillian K. Schneider (abstract) ... 1951 101 203
**Crouse, Helen V.** Resistance of Sciara (Diptera) to the mutagenic effects of irradiation ... 1949 97 311

**Crowell, Sears.** A new form of the hydroid Stylactis (abstract). 1947 93 206
The development of the basal mat in Hydractinia (abstract).. 1948 95 260
**Crowell, Sears, and Malcolm Rusk.** Growth of Campanularia colonies (abstract) ..... 1950 99 357
**Crowell, Sears.** *See* N. T. Mattox ..... 1951 101 162
**Cunningham, O.** *See* F. A. Brown, Jr. ..... 1941 81 80
**Currier, Joanne E.** *See* Madelene E. Pierce (abstract) ..... 1951 101 226
*See* Madelene E. Pierce (abstract) ..... 1952 103 306
**Curtis, Howard J., and John L. Myers.** Failure to find intercellular protoplasmic continuity in Griffithsia globulifera (abstract) ..... 1950 99 350
**Cushing, John E., and Lucian Sprague.** The agglutination of fish erythrocytes by normal human sera ..... 1952 103 328
**Cushing, John E.** *See* Demorest Davenport ..... 1952 102 100
**Cutkomp, Laurence.** *See* A. Glenn Richards ..... 1946 90 97

## D

**von Dach, Herman.** Respiration of a colorless flagellate, Astasia klebsii ..... 1942 82 356
**Dahl, A. Orville.** Cytological studies in Lymphaea L. (abstract). 1949 97 257
**Dales, R. Phillips.** An annual history of a population of Nereis diversicolor (O. F. Müller) ..... 1951 101 131
The larval development and ecology of Thoracophelia mucronata (Treadwell) ..... 1952 102 232
**Dan, Jean Clark.** Sperm entrance in echinoderms as observed with the phase-contrast microscope ..... 1950 99 399
Studies on the acrosome. I. Reaction to egg water and other stimuli ..... 1952 103 54
Fertilization in the medusan Spirocodon saltatrix ..... 1950 99 412
**Dan, Jean Clark.** *See* Katsuma Dan ..... 1947 93 139, 163
**Dan, Katsuma.** Electrokinetic studies of marine ova:
V. Effect of pH changes on the surface potentials of sea urchin eggs ..... 1947 93 259
VI. The effect of salts on the zeta potential of the eggs of Strongylocentrotus pulcherrimus ..... 1947 93 267
VII. Relation between the zeta potential and adhesiveness of the cell membrane of sea urchin eggs ..... 1947 93 274
Cyto-embryology in sea urchins (abstract) ..... 1951 101 237
Cyto-embryological studies of sea urchins. II. Blastula stage. 1952 102 74
The movement of the cortical layer of Arbacia eggs in a calcium-free medium, through cleavage and the resting stage, as revealed by the shift of the pigment granules (abstract) .... 1951 101 208
**Dan, Katsuma, and Jean Clark Dan.** Behavior of the cell surface during cleavage:
VII. On the division mechanism of cells with excentric nuclei.. 1947 93 139
VIII. On the cleavage of medusan eggs ..... 1947 93 163
**Dan, Katsuma, and Tomonao Ono.** Cyto-embryological studies of sea urchins. I. The means of fixation of the mutual positions among the blastomeres of sea urchin larvae ..... 1952 102 58

**Dan, Katsuma, Susumo Ito and Daniel Mazia.** Study of the course of formation of the mitotic apparatus in Arbacia and Mactra by isolation techniques (abstract) ..... 1952 103 292
**Dan, Katsuma.** *See* Daniel Mazia (abstract) ..... 1952 103 283
**D'Angelo, Ethel Glancy.** Micrurgical studies of Chironimus salivary gland chromosomes ..... 1946 90 71
**Danielli, J. F.** Studies on spindle material (abstract) ..... 1950 99 369
**Das, S. M.** The physiology of excretion in Molgula (Tunicata, Ascidiacea) ..... 1948 95 307
**Davenport, Demorest.** Further studies in the pharmacology of the heart of Cancer magister Dana ..... 1942 82 255
Studies in the physiology of commensalism. I. The polynoid genus Arctonoë ..... 1950 98 81
**Davenport, Demorest, and John F. Hickok.** Studies in the physiology of commensalism. II. The polynoid genera Arctonoë and Halosydna ..... 1951 100 71
**Davenport, D., Donald M. Wootton and John E. Cushing.** The biology of the Sierra luminous millipede, Luminodesmus sequoiae (Loomis and Davenport) ..... 1952 102 100
**Davis, E. F.** *See* H. S. Mason (abstract) ..... 1951 101 195
**Davis, Harry C.** On food and feeding of larvae of the American oyster, Ostrea (Crassostrea) virginica ..... 1953 104 334
**Davis, Harry C.** *See* Victor L. Loosanoff ..... 1950 98 60
*See* Victor L. Loosanoff ..... 1952 103 80
**Davis, James O.** Photochemical spectral analysis of neural tube formation ..... 1944 87 75
**Davson, H.** *See* Herbert Shapiro (abstract) ..... 1941 81 295
**Day, M. F.** The function of the corpus allatum in muscoid Diptera ..... 1943 84 127
**Day, M. F.** *See* E. H. Mercer ..... 1952 103 384
**De Falco, Ralph J.** A serological study of some avian relationships ..... 1942 83 205
**De Kornfeld, T. J.** *See* A. M. Shanes (abstract) ..... 1950 99 327
**Dethier, V. G.** The relation between olfactory response and receptor population in the blowfly ..... 1952 102 111
Adaptation to chemical stimulation of the tarsal receptors of the blowfly ..... 1952 103 178
**Dethier, V. G.** *See* C. C. Hassett ..... 1950 99 446
**Dewey, Virginia C.** Biochemical factors in the maximal growth of Tetrahymena ..... 1944 87 107
**Dewey, V. C., and G. W. Kidder.** The possibility of thiamine synthesis by ciliates (abstract) ..... 1941 81 285
**Dewey, V. C.** *See* C. Lloyd Claff ..... 1941 81 221
*See* George W. Kidder ..... 1944 87 121
*See* George W. Kidder ..... 1945 89 299
**Dey, T.** *See* A. K. Parpart (abstract) ..... 1947 93 199
*See* A. K. Parpart (abstract) ..... 1951 101 200

**Dickinson, J. C., Jr.** *See* W. C. Allee (abstract) ..... 1952 103 290
**Diller, William F.** An extra post-zygote division in Paramecium caudatum (abstract) ..... 1948 95 265
Induction of autogamy in single animals of Paramecium calkinsi, following mixture of two mating types (abstract) .... 1948 95 265
An abbreviated conjugation process in P. trichium ..... 1949 97 331
**Dippell, Ruth V.** *See* T. M. Sonneborn ..... 1943 85 36
**Di Stefano, Henry, and Daniel Mazia.** The role of the midpiece in the incorporation of $P^{32}$ into the ribonucleic acid of Arbacia spermatozoa (abstract) ..... 1952 103 299
**Dolley, William L., Jr., and John D. White.** The effect of illuminance on the reversal temperature in the drone fly, Eristalis tenax ..... 1951 100 84
The effect of illuminance on lethal temperature in E. tenax ... 1951 100 90
**Donovan, Joanne E.** *See* Charles B. Metz (abstract) ..... 1949 97 257
*See* Charles B. Metz (abstract) ..... 1951 101 202
**Doty, Maxwell, and Justine Garnic.** Porphyridium cruentum Nägeli and P. marinum Kylin (abstract) ..... 1949 97 238
Time phase of the tide factor hypothesis (abstract) ..... 1949 97 238
**Doty, Maxwell S.** *See* Elizabeth M. Fahey (abstract) ..... 1949 97 238
*See* Marie Boyle (abstract) ..... 1949 97 232
**Du Bois, A. B.** *See* A. E. Navez (abstract) ..... 1941 81 289
**Dunn, Alfred.** *See* L. V. Heilbrunn (abstract) ..... 1952 103 303
**Duodoroff, Peter.** The resistance and acclimatization of marine fishes to temperature changes:
I. Experiments with Girella nigricans (Ayres) ..... 1942 83 219
II. Experiments with Atherinops and Fundulus ..... 1945 88 194
**Duodoroff, Peter.** *See* F. B. Sumner ..... 1943 84 187
**Duryee, William R.** The effect of X-rays on chromosomes and nucleoli in ovarian eggs of the salamander Triturus pyrrhogaster (abstract) ..... 1947 93 206
**Duryee, W. R., and Philip H. Abelson.** Permeability to radioactive sodium in frog eggs (abstract) ..... 1947 93 225
**Duryee, W. R.** *See* Claude A. Villee (abstract) ..... 1951 101 231
*See* Philip H. Abelson ..... 1949 96 205
**Dytche, M.** *See* E. Alfred Wolf (abstract) ..... 1941 81 305
**Dzieman, A. J.** The permeability and the lipid content of the erythrocytes in experimental anemia (abstract) ..... 1941 81 277

## E

**Edmondson, W. T.** Rotatoria from Penikese Island, Mass., with a description of Ptygura agassizi spec. nov. ..... 1948 94 263
**Edwards, John P.** *See* W. D. Burbanck (abstract) ..... 1947 93 190
**Egner, V. E.** *See* L. E. Chadwick ..... 1953 104 323
**Eichel, Bertram, and W. W. Wainio.** Comparison of the action of sodium adipate and sodium malonate on succinic dehydrogenase activity (abstract) ..... 1952 103 300

**Eichel, Bertram, S. J. Cooperstein and W. W. Wainio.** A partial separation of the cytochromes of mammalian heart muscle (abstract) ..... 1948 **95** 239
**Eichel, B.** *See* Philip Person (abstract) ..... 1952 **103** 287
*See* W. W. Wainio (abstract) ..... 1947 **93** 214
**Eichel, Herbert J., and Jay S. Roth.** Respiration and enzyme studies on X-rayed Tetrahymena (abstract) ..... 1952 **103** 300
The effect of X-ray irradiation on nuclease activity and respiration of Tetrahymena geleii W ..... 1953 **104** 351
**Ellenbogen, Saul, and Vasil Obreshkove.** Cardiac pharmacology of a cladoceran ..... 1949 **97** 138
**Elliott, A. M., and D. F. Gruchy.** The occurrence of mating types in Tetrahymena (abstract) ..... 1952 **103** 301
**Elliott, A. M., J. F. Hogg, J. V. Slater and C. Wu.** Improved culture conditions for Tetrahymena (abstract) ..... 1952 **103** 301
**Elliott, Alfred M., and Robert L. Hunter.** Phosphatase activity in Tetrahymena (abstract) ..... 1950 **99** 357
Phosphatase activity in Tetrahymena ..... 1951 **100** 165
**Elliott, A. M.** *See* J. S. Roth (abstract) ..... 1950 **99** 335
**Ellis, C. H.** The mechanism of extension in the legs of spiders .. 1944 **86** 41
**Ellis, C. H., C. H. Thienes and C. A. G. Wiersma.** The influence of certain drugs on the crustacean nerve-muscle system. 1942 **83** 334
**El-Toubi, M. R.** The development of the spiracular cartilages of the spiny dogfish, Acanthias vulgaris ..... 1947 **93** 287
**Enami, Masashi.** The sources and activities of two chromatophorotropic hormones in crabs of the genus Sesarma:
I. Experimental analyses ..... 1951 **100** 28
II. Histology of incretory elements ..... 1951 **101** 241
**Engels, William L.** *See* Charles E. Jenner ..... 1952 **103** 345
**Engle, James B.** *See* V. L. Loosanoff ..... 1943 **85** 69
**Evans, Frederick R., and Robert C. Pendleton.** A study of radiophosphate uptake in Paramecium multimicronucleatum. 1952 **103** 190
**Evans, G.** *See* W. C. Allee ..... 1942 **83** 245
**Evans, Hiram J.** The independent differentiation of the sensory areas of the avian inner ear ..... 1943 **84** 252
**Evans, Titus C.** The effect of Roentgen radiation on the jelly of the Nereis zygote (abstract) ..... 1941 **81** 298
Effects of hydrogen peroxide, produced in the medium by radiation, on spermatozoa of A. punctulata ..... 1947 **92** 99
Some effects of X-rays on the mechanisms of cell division (abstract) ..... 1950 **99** 317
**Evans, T. C., and J. C. Slaughter.** Effect of sea water on the radiosensitivity of Arbacia sperm (abstract) ..... 1941 **81** 282
**Evans, T. C., J. C. Slaughter, E. P. Little and G. Failla.** The influence of the medium on the radiosensitivity of sperm (abstract) ..... 1941 **81** 291
**Everest, F. Alton.** *See* Martin W. Johnson ..... 1947 **93** 122

## F

**Fager, E. W.** *See* A. H. Brown (abstract) ..... 1948 95 284
**Fahey, Elizabeth M.** A preliminary study of the vertical distribution of marine organisms in the Cape Cod area (abstract) 1947 93 193
Pioneer colonization on intertidal transects (abstract) ..... 1949 97 238
**Failla, G.** *See* Titus C. Evans (abstract) ..... 1941 81 291
**Fajer, A.** *See* L. C. Junqueira (abstract) ..... 1948 95 243
**Fankhauser, G., and R. R. Humphrey.** Induction of triploidy and haploidy in axolotl eggs by cold treatment ..... 1942 83 367
**Farner, Donald S.** Biliary amylase in the domestic fowl ..... 1943 84 240
**Faulstick, Dyrel.** *See* Theodore H. Bullock (abstract) ..... 1950 99 320
**Fauré-Fremiet, E.** The marine sand-dwelling ciliates of Cape Cod shores (abstract) ..... 1950 99 349
The marine sand-dwelling ciliates of Cape Cod ..... 1951 100 59
The tidal rhythm of the diatom Hantzschia amphioxys ..... 1951 100 173
**Feinstein, B.** *See* B. Libet (abstract) ..... 1951 101 194
**Ferguson, Frederick P.** The effect of temperature on the rate of disappearance of caudal bands in Fundulus heteroclitus .. 1944 86 154
**Fiala, Silvio, and Dean Burk.** On the nature of iron binding by siderophilin, conalbumin, hydroxylamine, aspergillic acid and related hydroxamic acids (abstract) ..... 1948 95 282
**Field, J., II.** *See* W. J. Van Wagtendonk ..... 1942 83 137
**Field, John.** *See* C. N. Peiss ..... 1950 99 213
**Figge, Frank H. J., and Ralph Wichterman.** The effects of hematoporphyrin and other substances upon X-ray sensitivity of Paramecium (abstract) ..... 1952 103 302
**Figge, F. H. J.** *See* Ralph Wichterman (abstract) ..... 1952 103 311
**Fingerman, Milton.** *See* F. A. Brown, Jr. (abstract) ..... 1951 101 217
*See* F. A. Brown, Jr. ..... 1952 102 212
*See* F. A. Brown, Jr. (abstract) ..... 1952 103 297
*See* Muriel I. Sandeen (abstract) ..... 1952 103 307
**Finkel, A. J.** *See* W. C. Allee ..... 1942 83 245
**Fisher, Kenneth C.** The fractionation of cellular respiration by the use of narcotics (abstract) ..... 1941 81 282
Some physiological factors involved in the maximum velocity at which trout swim (abstract) ..... 1947 93 223
Movements of organisms to or away from a source of stimulation (abstract) ..... 1949 97 271
**Fisher, K. C.** *See* R. M. Marvel ..... 1948 94 45
*See* J. F. Manery (abstract) ..... 1950 99 312
**Fitzgerald, Laurence Rockwell.** *See* J. H. Bodine ..... 1949 96 1
**Flemister, Launce J., and Sarah C. Flemister.** Chloride ion regulation and oxygen consumption in the crab Ocypode albicans ..... 1951 101 259
**Flood, Veronica.** *See* E. S. G. Barron ..... 1949 97 44, 51
**Florkin, Marcel.** Comparative studies on ectodermal scleroproteins (abstract) ..... 1952 103 315
**Foley, Mary T.** *See* Charles B. Metz (abstract) ..... 1947 93 210

**Folger, H. T.** The response to light by amoeba. The period of quiescence in the response..... 1947 **93** 45
**Forbes, Grace Springer, and Henry E. Crampton.** The effects of population density upon growth and size in Lymnea palustris..... 1942 **83** 283
The differentiation of geographical groups in Lymnea palustris 1942 **82** 26
**Forsthoefel, Paul.** The occurrence of twinning in Fundulus heteroclitus after centrifugation (abstract)..... 1951 **101** 221
**Foster, Elizabeth, Martha Barnes Baylor, Norman A. Meinkoth and G. L. Clarke.** An electron microscope study of protozoan flagella..... 1947 **93** 114
**Fox, Denis L., and Sheldon Crane.** Concerning the pigments of the two-spotted octopus and the opalescent squid..... 1942 **82** 284
**Fox, D. L.** *See* Wesley R. Coe..... 1944 **87** 59
**Fox, Howard.** *See* Allan Scott (abstract)..... 1952 **103** 288
**Fraenkel, G.** A function of the salivary glands in the larvae of Drosophila and other flies (abstract)..... 1952 **103** 285
Studies on the distribution of vitamin $B_t$ (carnitine)..... 1953 **104** 359
**Frankenthal, L.** *See* L. C. Junqueira (abstract)..... 1948 **95** 243
**Frascella, Evelyn B.** *See* J. T. Bonner..... 1953 **104** 297
**Freeman, John A., and Karl M. Wilbur.** Carbonic anhydrase in molluscs..... 1948 **94** 55
**Freeman, John A.** Oxygen consumption, brain metabolism and respiratory movements of goldfish during temperature acclimatization, with special reference to lowered temperatures. 1950 **99** 416
**Freeman, Paul J.** Some aspects of blood coagulation in certain decapod crustaceans (abstract)..... 1952 **103** 316
**Frenkel, Albert.** Effects of ultraviolet light on catalase activity and photosynthesis of Chlorella pyrenoidosa (abstract)..... 1949 **97** 222
Studies of the hydrogenase systems of green and blue-green algae (abstract)..... 1949 **97** 261
Photosynthesis and photoreduction by a species of blue-green alga (abstract)..... 1949 **97** 269
**Frenkel, A., Hans Gaffron and Edwin H. Battley.** Photosynthesis and photoreduction by the blue-green alga, Synechococcus elongatus Näg..... 1950 **99** 157
**Friedland, Beatrice, and Morris H. Harnly.** The effect of temperature on the wings of dimorphos/dimorphos vestigial/pennant/vestigial in Drosophila melanogaster..... 1945 **88** 247
**Fries, E. F. B.** Notes on color change and pigmentary innervation in a goby, a wrasse, and the plaice..... 1942 **82** 273
Some neuro-humoral evidence for double innervation of xanthophores in killifish (Fundulus)..... 1942 **82** 261
**Frings, Hubert.** Gustatory rejection thresholds for the larvae of the cecropia moth, Samia cecropia Linn..... 1945 **88** 37
**Froehlich, A.** The influence of theophylline on the absorption of magnesium salts from the gastro-intestinal canal (abstract). 1948 **95** 254
**Frost, Betty Lu.** *See* D. M. Pace..... 1952 **103** 97

**Fry, F. E. J., and J. S. Hart.** The relation of temperature to oxygen consumption in the goldfish ..... 1948 94 66
**Fry, F. E. J., V. S. Black and Edgar C. Black.** Influence of temperature on the asphyxiation of young goldfish (Carassius auratus L.) under various tensions of oxygen and carbon dioxide ..... 1947 92 217
**Fuhrman, F. A.** *See* Van Wagtendonk ..... 1942 83 137
**Fuller, John L.** *See* F. L. Topping ..... 1942 82 372
**Furshpan, Edwin.** *See* E. G. Boettiger (abstract) ..... 1950 99 346
*See* E. G. Boettiger (abstract) ..... 1951 101 199
*See* E. G. Boettiger ..... 1952 102 200
**Fusco, Edna M.** *See* Charles B. Metz (abstract) ..... 1949 97 245

## G

**Gaffron, Hans.** *See* A. H. Brown (abstract) ..... 1948 95 284
*See* A. Frenkel (abstract) ..... 1949 97 269
*See* A. Frenkel ..... 1950 99 157
*See* A. H. Mehler (abstract) ..... 1950 99 318
**Gagnon, Andre.** Action of heparin on fertilization and cleavage in some marine eggs (abstract) ..... 1950 99 341
**Galambos, Robert.** *See* Carroll M. Williams ..... 1950 99 300
**Galston, Arthur W.** Riboflavin sensitized photo-oxidations and their significance in plant physiology (abstract) ..... 1949 97 270
**Galtsoff, Paul S.** Accumulation of manganese and the sexual cycle in Ostrea virginica (abstract) ..... 1941 81 278
*See* Edith Mortensen (abstract) ..... 1944 87 164
**Galtsoff, Paul S., and Eugenia Galtsoff.** Interaction between the implanted embryos and the internal organs of an adult teleost, Opsanus tau (abstract) ..... 1947 93 193
**Galtsoff, Eugenia.** *See* Paul S. Galtsoff (abstract) ..... 1947 93 193
**Gans, J.** *See* C. C. Hassett ..... 1950 99 446
**Garner, H. R.** *See* W. C. Allee ..... 1942 83 245
**Garnic, Justine.** *See* Maxwell S. Doty (abstract) ..... 1949 97 238
**Garrey, Walter E.** "Spot" beats in deganglionated hearts of Limulus (abstract) ..... 1950 99 358
**Gasvoda, Betty.** *See* E. S. G. Barron ..... 1949 97 44, 51
**Gates, G. E.** Regeneration in an earthworm, Eisenia foetida (Savigny, 1826):
I. Anterior regeneration ..... 1949 96 129
II. Posterior regeneration ..... 1950 98 36
III. Regeneration from simultaneous anterior and posterior transections ..... 1950 99 425
**Gates, R. Ruggles.** Tests of nucleoli and cytoplasmic granules in marine eggs (abstract) ..... 1941 81 298
Some observations regarding the nucleolus and cytoplasm in living marine eggs ..... 1942 82 47
**Gaulden, Mary Esther.** *See* J. G. Carlson ..... 1953 104 313
**Geisler, Sr. Francis Solano.** Studies on the post-embryonic development of Hyalella azteca Saussure ..... 1944 86 6

**George, W. C.** The digestion and absorption of fat in lamellibranchs ..... 1952 **102** 118
**Getman, Herbert C.** Adaptive changes in the chloride cells of Anguilla rostrata ..... 1950 **99** 439
**Giese, Arthur C.** Comparative sensitivity of sperm and eggs to ultraviolet radiations ..... 1946 **91** 81
A cytotoxin from Blepharisma ..... 1949 **97** 145
**Giese, A. C., C. L. Brandt, R. Iverson and P. H. Wells.** Photoreactivation in Colpidium colpoda ..... 1952 **103** 336
**Giese, A. C.** *See* Patrick H. Wells ..... 1950 **99** 163
**Gilman, Lauren C.** Intervarietal mating reactions in Paramecium caudatum (abstract) ..... 1949 **97** 239
Position of Japanese varieties of P. caudatum with respect to American varieties (abstract) ..... 1950 **99** 348
**Gilmartin, Rosemary.** *See* J. P. Trinkaus (abstract) ..... 1949 **97** 250
**Glaser, Otto.** Note on the growth of arms in the pluteus of Arbacia punctulata ..... 1950 **98** 34
Some physical constants of the Fundulus egg (abstract) ..... 1950 **99** 337
**Glassman, H. N.** *See* M. H. Jacobs (abstract) ..... 1950 **99** 325
**Goddard, David R., and Anne M. Slater.** The possible role of peroxidase in cellular respiration (abstract) ..... 1947 **93** 227
**Gold, Marcia.** *See* Harold Persky (abstract) ..... 1948 **95** 278
**Goldberg, Edward D., William McBlair and Kenneth M. Taylor.** The uptake of vanadium by tunicates ..... 1951 **101** 84
**Goldberg, E. D., Theodore J. Walker and Alice Whisenand.** Phosphate utilization by diatoms ..... 1951 **101** 274
**Goldberg, E. D.** Iron assimilation by marine diatoms ..... 1952 **102** 243
**Golden, Lawrence H.** *See* W. L. Dolley, Jr. ..... 1947 **92** 178
**Goldin, Abraham.** A quantitative study of the inter-relationship of oxygen and hydrogen ion concentration in influencing Tubularian regeneration ..... 1942 **82** 340
Factors influencing regeneration and polarity determination in Tubularia crocea ..... 1942 **82** 243
Regeneration in Perophora viridis ..... 1948 **94** 184
**Goldin, A., and L. G. Barth.** Regeneration of coenosarc fragments removed from the stem of T. crocea ..... 1941 **81** 177
**Goldinger, J. M.** *See* E. S. G. Barron (abstract) ..... 1941 **81** 289
*See* Richard Abrams (abstract) ..... 1948 **95** 284
**Goldschmidt, Elisabeth.** The influence of temperature on synapsis in hybrid salivary glands ..... 1952 **103** 67
**Goldstein, Avram.** The mechanism of interaction of inhibitors with human plasma cholinesterase (abstract) ..... 1948 **95** 275
**Goldstein, Avram, and Dora B. Goldstein.** Report of investigations, summer of 1948, on cholinesterase (abstract) ..... 1948 **95** 278
**Goldstein, Lester.** An experimental study of maturation in Chaetopterus eggs (abstract) ..... 1950 **99** 341
The mechanism of nuclear breakdown in the Chaetopterus egg (abstract) ..... 1952 **103** 292

**Goodchild, Chauncey G.** The life history of Phyllodistomum solidum Rankin, 1937, with observations on the morphology, development, and taxonomy of the Gorgoderinae (Trematoda) ..... 1943 **84** 59
**Goodsmith, W., and Taylor Hinton.** Altering the expression of position effect (abstract) ..... 1947 **93** 194
**Gordon, M.** *See* Claude A. Villee (abstract) ..... 1948 **95** 279
**Gould, Harley N.** Conditions affecting development of the male phase in Crepidula plana (abstract) ..... 1947 **93** 194
Effect of temperature on growth and sexual changes in Crepidula plana (abstract) ..... 1949 **97** 239
**Gould, H. N., and Sidney C. Hsiao.** New experiments and observations on sexual instability in Crepidula (abstract) ..... 1948 **95** 255
**Gourley, D. R. H.** *See* J. F. Manery (abstract) ..... 1950 **99** 312
**Grave, Benjamin H.** The sexual cycle of the shipworm, Teredo navalis ..... 1942 **82** 438
**Grave, Caswell.** Further studies of metamorphosis of ascidian larvae (abstract) ..... 1941 **81** 286
The "eye-spot" and light responses of the larva of Cynthia partita (abstract) ..... 1941 **81** 287
**Graves, Robert C.** *See* H. M. Webb (abstract) ..... 1952 **103** 310
*See* F. A. Brown, Jr. (abstract) ..... 1952 **103** 297
**Gray, Irving E.** Changes in weight and water content during the life cycle of the wood-eating beetle, Passulus cornutus ..... 1944 **86** 23
*See* F. John Vernberg ..... 1953 **104** 445
**Green, James W.** The relative rate of penetration of the lower fatty acids into beef red cells (abstract) ..... 1948 **95** 245
The relative rate of penetration of the lower fatty acids into erythrocytes of the smooth dogfish (abstract) ..... 1948 **95** 255
**Green, James W., and A. K. Parpart.** Effects of metabolic poisons on potassium loss from rabbit red cells (abstract) .. 1950 **99** 325
**Green, J. W., and Jay S. Roth.** The effect of $P^{32}$ on the division time of Arbacia eggs (abstract) ..... 1950 **99** 358
**Green, J. W., and Joseph F. Hoffman.** Isotonic solutions for the erythrocytes of the smooth dogfish, mackerel, and tautog (abstract) ..... 1950 **99** 338
Isotonic solutions for fish erythrocytes (abstract) ..... 1951 **101** 208
**Green, J. W.** *See* A. K. Parpart (abstract) ..... 1951 **101** 212
**Gregg, James H.** Background illumination as a factor in the attachment of barnacle cyprids ..... 1945 **88** 44
Replication of substrate detail by barnacles and some other marine organisms ..... 1948 **94** 161
Oxygen utilization in relation to growth and differentiation in the slime mold, Dictyostelium discoideum (abstract) ..... 1949 **97** 240
**Gregg, John R., and Norma Ornstein.** Anaerobic ammonia production by amphibian gastrulae explants ..... 1952 **102** 22
**Gregg, John R.** *See* N. Ornstein ..... 1952 **103** 407
**Grégoire, Ch.** Blood coagulation in arthropods. III. Reactions of insect hemolymph to coagulation inhibitors of vertebrate blood 1953 **104** 372

**Greulach, Victor A., John McKenzie and Emily M. Stacy.** The effect of maleic hydrazide on the embryonic and larval growth of three amphibians ..... 1951 **101** 285
**Grieg, Margaret E.** The effect of physostigmine and acetylcholine on the permeability of erythrocytes (abstract) ..... 1950 **99** 311
**Griffin, Donald R.** Polarized light and the orientation of bees (abstract) ..... 1950 **99** 326
**Grimm, Madelon R.** *See* H. H. Plough (abstract) ..... 1949 **97** 221
**Grosch, Daniel S.** Cytological investigations of the gut epithelium in haploids and diploids of Habrobracon (abstract) .. 1949 **97** 237
Staining procedures for whole mounts of the spinning glands of Habrobracon larvae (abstract) ..... 1950 **99** 358
Starvation studies with the parasitic wasp, Habrobracon..... 1950 **99** 65
I. The ingestion capacity of the wasp Habrobracon (abstract). 1951 **101** 222
The passage of vital stain from host to ectoparasitic wasp (abstract) ..... 1952 **103** 302
**Grosch, D. S., and A. M. Clark.** Starvation studies with Habrobracon. II. Comparison in longevity (abstract)..... 1950 **99** 359
**Grosch, D. S., and Robert L. Sullivan.** The effect of ingested radiophosphorus on egg production and embryo survival in the wasp Habrobracon..... 1952 **102** 128
**Grosch, D. S.** *See* A. M. Clark (abstract) ..... 1948 **95** 264
**Gross, Paul Randolph.** Variable sensitivity of Chaetopterus eggs to ultraviolet light (abstract) ..... 1950 **99** 359
The lytic action of calcium ions on the pigment granules of the Arbacia egg (abstract) ..... 1951 **101** 209
An enzymatic study of yolk platelet lysis (abstract) ..... 1952 **103** 281
A study of colloidal changes in sea urchin egg homogenates (abstract) ..... 1952 **103** 293
**Gross, Samson R.** Heterokaryosis between opposite mating types of Neurospora crassa (abstract) ..... 1950 **99** 331
**Guttman, Rita, and K. S. Cole.** The rectifying property of the giant axon of the squid (abstract) ..... 1941 **81** 277
**Guttman, R., Arnold M. Katz and John F. Perkins, Jr.** Depolarization and contraction in smooth muscle on rapid cooling (abstract) ..... 1952 **103** 302
**Guyselman, J. Bruce.** A new method for determining calcium concentrations in biological materials (abstract) ..... 1951 **101** 222
An analysis of the molting process in the fiddler crab, Uca pugilator..... 1953 **104** 115

## H

**Hager, R. P.** Sex-linkage of stubby (sb) in Habrobracon (abstract) ..... 1941 **81** 298
**Halaban, Atida.** Vitamin K as a protoplasmic coagulant and parthenogenetic agent (abstract) ..... 1949 **97** 240
**Halaban, A.** *See* L. V. Heilbrunn (abstract) ..... 1952 **103** 282

**Hall, C. E., M. A. Jakus and F. O. Schmitt.** An investigation of cross striations and myosin filaments in muscle..... 1946 90 32
**Hall, C. E.** *See* M. A. Jakus..... 1946 91 141
**Hall, R. P., and W. B. Cosgrove.** The question of the synthesis of thiamin by the ciliate, Glaucoma piriformis..... 1944 86 31
**Hall, Thomas S., and Florence Moog.** Effects of sodium azide on the rate of amphibian development (abstract)..... 1947 93 213
**Hamburger, Viktor.** The effects of peripheral factors on motor neuron differentiation in the chick embryo (abstract)..... 1944 87 153
**Hamilton, H. L.** The influence of hormones on the differentiation of melanophores in birds (abstract)..... 1941 81 281
**Hand, Cadet, and John R. Hendrickson.** A two-tentacled commensal hydroid from California..... 1950 99 74
**Hardin, Garrett.** *See* Harold H. Strain..... 1944 86 169
**Harding, Clifford V.** Effect of ultraviolet light (2537 Å) on cleavage time in Arbacia eggs (abstract)..... 1949 97 241
The action of heparin on fertilization in the eggs of Arbacia punctulata and Echinarachnius parma (abstract)..... 1950 99 340
**Harding, Drusilla.** Initiation of cell division by injury substances (abstract)..... 1949 97 241
**Harding, Drusilla.** *See* L. V. Heilbrunn (abstract)..... 1950 99 340
**Hare, Laura.** *See* Hugh E. Martin..... 1942 83 428
**Harnly, Morris Henry.** Wing form and gene function in nine genotypes of Drosophila melanogaster..... 1942 82 215
**Harnly, M. H.** *See* Beatrice Friedland..... 1945 88 247
**Harrington, Nyra J., and Robert W. Koza.** Effect of X radiation on the desoxyribonucleic acid and on the size of the grasshopper embryonic nuclei..... 1951 101 138
**Harrington, N. J.** *See* J. G. Carlson..... 1953 104 313
**Harris, Daniel L.** The osmotic properties of cytoplasmic granules of the sea urchin egg..... 1943 85 179
Phosphoprotein (abstract)..... 1944 87 164
**Hart, J. S.** *See* F. E. J. Fry..... 1948 94 66
**Harting, J.** The effect of sulfhydril inhibitors on the anaerobic glycolysis of scallop and thyone muscle (abstract)..... 1947 93 194
**Hartung, Ernest W.** Cytological and experimental studies on the oöcytes of freshwater pulmonates..... 1947 92 10
**Harvey, Ethel Browne.** Maternal inheritance in echinoderm hybrids (abstract)..... 1941 81 288
Vital staining of the A. punctulata egg..... 1941 81 114
Rate of breaking and size of the "halves" of the Arbacia egg when centrifuged in hypo- and hypertonic sea water..... 1943 85 141
Stratification and breaking of the Arbacia egg when centrifuged in single salt solutions..... 1945 89 72
Bermudan sea urchins and their eggs (abstract)..... 1947 93 217
Growth and metamorphosis of the Arbacia punctulata pluteus..... 1949 97 223, 287
Electrical method of "sexing" Arbacia and obtaining small quantities of eggs (abstract)..... 1952 103 284

**Harvey, E. B., and George I. Lavin.** The chromatin in the living Arbacia egg, and the cytoplasm of the centrifuged egg, as photographed by ultraviolet light ..... 1944 86 163
Photography of Arbacia punctulata eggs with infrared light (abstract) ..... 1950 99 360
**Harvey, E. B., and Thomas F. Anderson.** The spermatozoön and fertilization membrane of Arbacia punctulata as shown by the electron microscope ..... 1943 85 151
**Harvey, E. Newton.** Stimulation by intense flashes of ultraviolet light (abstract) ..... 1941 81 291
Adenosinetriphosphate and the luminescence of the "railroad worm" and other luminous organisms (abstract) ..... 1949 97 257
Luminescent reactions in the "railroad worm," Phrixothrix (abstract) ..... 1950 99 360
**Hassett, C. C.** The effect of dyes on the response to light in Peranema tricophorum (abstract) ..... 1941 81 285
The utilization of sugars and other substances by Drosophila. 1948 95 114
**Hassett, Charles C., V. G. Dethier and J. Gans.** A comparison of nutritive values and taste thresholds of carbohydrates for the blowfly ..... 1950 99 446
**Hastings, A. Baird.** *See* Claude A. Villee (abstract) ..... 1950 99 312
**Havel, V. J.** *See* L. H. Kleinholz ..... 1950 99 454
**Haxo, Francis.** Carotenoid formation by mutant strains of Neurospora crassa (abstract) ..... 1952 103 286
*See* Julius Silberger (abstract) ..... 1950 99 364
**Haxo, Francis, and Phyllis Strout.** Nitrogen deficiency and coloration in red algae (abstract) ..... 1950 99 360
**Hay, Elizabeth Dexter.** Role of epidermis in amphibian regeneration as revealed by triploid and haploid transplants to diploid limbs (abstract) ..... 1950 99 351
**Hayashi, Teru.** Dilution medium and survival of the spermatozoa of Arbacia punctulata:
I. Effect of the medium on fertilizing power ..... 1945 89 162
II. Effect of the medium on respiration ..... 1946 90 177
**Hayes, E. R.** The elasmobranch interrenal: a preliminary note. The interrenal body of Alopias vulpinus Bonaterre (abstract) 1941 81 299
**Hayward, Frederick W.** *See* Alexis L. Romanoff ..... 1943 84 141
**Hayward, Hugh R.** *See* George T. Scott (abstract) ..... 1950 99 363
*See* George T. Scott (abstract) ..... 1952 103 308
**Haywood, Charlotte, and Mary Jean Clapp.** A note on the freezing points of the urines of two freshwater fishes: the catfish, Ameirurus nebulosus and the sucker, Catostomus commersonii ..... 1942 83 363
**Heilbrunn, L. V., and Louis Moreau.** Protoplasmic injury substances and their effect on the organism (abstract) ..... 1947 93 223
**Heilbrunn, L. V., and Walter L. Wilson.** Protoplasmic viscosity changes during mitosis in the egg of the Chaetopterus 1948 95 57
The relation of heparin to protoplasmic clotting (abstract) ... 1948 95 283
Cell division in relation to protoplasmic clotting (abstract) ... 1949 97 242

**Heilbrunn, L. V., A. B. Chaet, Arnold Dunn and W. L. Wilson.** A further study of the mitotic inhibitors in starfish extracts (abstract) ..... 1952 103 303
**Heilbrunn, L. V., Atida Halaban and W. L. Wilson.** An attempt to influence the survival time of cancerous mice (abstract) ..... 1952 103 282
**Heilbrunn, L. V., W. L. Wilson and D. Harding.** Effect of tissue extracts on cell division (abstract) ..... 1950 99 340
**Heilbrunn, L. V.** *See* W. L. Wilson (abstract) ..... 1951 101 213
*See* W. L. Wilson ..... 1952 103 139
**Hempling, H. G.** Potassium and sodium content in dogfish leucocytes (abstract) ..... 1952 103 303
**Hendrickson, John R.** *See* Cadet Hand ..... 1950 99 74
**Henley, Catherine.** The effects of lithium chloride on the fertilized eggs of Nereis limbata ..... 1946 90 188
Cytological effects of low temperature on fertilized eggs of Chaetopterus (abstract) ..... 1949 97 258
Cytological abnormalities produced by experimental temperature shock on Triturus torosus embryos ..... 1950 98 1
**Henley, Catherine, and Donald P. Costello.** The chromosome number of Triturus torosus (abstract) ..... 1947 93 207
**Henley, Catherine.** *See* Donald P. Costello (abstract) ..... 1947 93 205
*See* D. P. Costello (abstract) ..... 1949 97 256
*See* D. P. Costello ..... 1950 99 386
*See* D. P. Costello (abstract) ..... 1952 103 298
**Herlant-Meewis, Henriette.** Cyst formation in Aelosoma hemprichi Ehr. ..... 1950 99 173
**Hess, W. N.** Factors influencing molting in the crustacean, Crangon armillatus ..... 1941 81 215
**Hestrin, Shlomo.** Action pattern of crystalline muscle phosphorylase (abstract) ..... 1948 95 238
**Hiatt, Robert W., John J. Naughton and Donald C. Matthews.** Effects of chemicals on a schooling fish, Kuhlia sandvicensis 1953 104 28
**Hibbard, Hope, and George I. Lavin.** A study of the Golgi apparatus in chicken gizzard epithelium by means of the quartz microscope ..... 1945 89 157
**Hickok, John F.** *See* Demarest Davenport ..... 1951 100 71
**Hill, S. E.** The relation between protoplasmic streaming and the action potential in Nitella and Chara (abstract) ..... 1941 81 296
**Hillier, J., A. I. Lansing and T. B. Rosenthal.** Electron microscopy of some marine egg surfaces (abstract) ..... 1952 103 293
**Hillier, J.** *See* A. I. Lansing (abstract) ..... 1952 103 294
**Himmelfarb, Sylvia.** *See* William R. Amberson (abstract) ..... 1949 97 231
*See* W. R. Amberson (abstract) ..... 1950 99 314
**Hines, Margaret N.** *See* Frank A. Brown, Jr. (abstract) ..... 1951 101 217
*See* F. A. Brown, Jr. ..... 1952 102 212
**Hinton, Taylor.** A study of chromosome ends in salivary gland nuclei of Drosophila ..... 1945 88 144

Factors influencing the expression of "position effects" (abstract) ..... 1947 93 216
**Hinton, Taylor.** *See* W. Goodsmith (abstract) ..... 1947 93 194
**Hirata, Arthur.** Studies on shell formation. II. A mantle-shell preparation for *in vitro* studies ..... 1953 104 394
**Hisaw, F. L., and A. Albert.** Observations on the reproduction of the spiny dogfish, Squalus acanthias ..... 1947 92 187
**Hisaw, Frederick L.** *See* A. A. Abramowitz ..... 1944 86 1
**Hoberman, Henry D., and Charles B. Metz.** Incorporation of deuterium into proteins of Arbacia eggs suspended in heavy water (abstract) ..... 1951 101 209
**Hock, Hans.** *See* W. R. Amberson (abstract) ..... 1950 99 314
**Hock, Raymond.** *See* P. F. Scholander ..... 1950 99 225, 237, 259
**Hock, Raymond J.** The metabolic rates and body temperatures of bats ..... 1951 101 289
**Hoffman, Joseph F.** The action of uranyl salts on the erythrocyte surface (abstract) ..... 1952 103 303
**Hoffman, J. F.** *See* James W. Green (abstract) ..... 1950 99 338
*See* James W. Green (abstract) ..... 1951 101 208
*See* A. K. Parpart (abstract) ..... 1951 101 212
**Hogg, J. F.** *See* A. M. Elliott (abstract) ..... 1952 103 301
**Hollingsworth, J.** Activation of Cumingia and Arbacia eggs by bivalent cations ..... 1941 81 261
**Holt, A. S.** Effect of ultraviolet on green algae and isolated chloroplasts (abstract) ..... 1949 97 268
**Hopkins, D. L.** The cytology of Amoeba verrucosa (abstract) .. 1941 81 299
The contractile vacuole and the adjustment to changing concentration in freshwater amoebae ..... 1946 90 158
**Hopkins, Hoyt S.** Further observations on the metabolism of clams' tissues in sea water at different salinities (abstract) .. 1948 95 265
**Hopkins, Sewell H.** The external morphology of the third and fourth zoëal stages of the blue crab, Callinectes sapidus Rathbun ..... 1944 87 145
**Hopkins, S. H.** *See* Mildred Sandoz ..... 1947 93 250
**Houlihan, Robert K.** *See* Gerald R. Seaman (abstract) ..... 1949 97 246
**Hovanitz, William.** Hybridization and seasonal segregation in two races of a butterfly occurring together in two localities. 1943 85 44
**Hsiao, Sidney C.** *See* Harley N. Gould (abstract) ..... 1948 95 255
**Hsu, W. Siang.** Some observations on the Golgi material in the larval epidermal cells of Drosophila melanogaster ..... 1948 95 163
**Huf, Ernst G.** The nature of the electrolyte pump in the isolated surviving frog skin (abstract) ..... 1950 99 313
**Hughes-Schrader, Sally.** Polarization, kinetochore movements and bivalent structure in the meiosis of male mantids ..... 1943 85 265
A primitive coccid chromosome cycle in Puto sp. ..... 1944 87 167
The desoxyribonucleic acid content of the nucleus as a cytotaxonomic character in mantids (Orthoptera: Mantoidea) .. 1951 100 178
**Humphrey, R. R.** *See* G. Fankhauser ..... 1942 83 367

**Hungate, R. E.** The culture of Eudiplodinium neglectum, with experiments on the digestion of cellulose ..... 1942 **83** 303
Further observations on cellulose digestion by the protozoa in the rumen of cattle ..... 1943 **84** 157
**Hunninen, A. V.** *See* R. M. Cable (abstract) ..... 1941 **81** 279
*See* R. M. Cable ..... 1942 **82** 292
**Hunter, F. R.** Osmotic hemolysis in hypertonic solutions (abstract) ..... 1948 **95** 246
An analysis of the photoelectric method of measuring permeability (abstract) ..... 1949 **97** 228
**Hunter, F. R., Jane A. Bullock and June Rawley.** The effect of bacterial toxins on the permeability of dogfish erythrocytes (abstract) ..... 1948 **95** 255
Bacteria and cellular activities. IV. Action of toxins on respiration and hemolysis of dogfish erythrocytes and on respiration of marine eggs ..... 1949 **97** 57
**Hunter, George W., III, and E. Wasserman.** Observations on the melanophore control of the cunner, Tautogolabrus adspersus Walbaum (abstract) ..... 1941 **81** 300
**Hunter, Robert L.** *See* Alfred M. Elliott (abstract) ..... 1950 **99** 357
*See* Jay S. Roth (abstract) ..... 1950 **99** 335
*See* Alfred M. Elliott ..... 1951 **100** 165
**Hutchens, J. O.** The utilization of ammonia by Chilomonas paramecium (abstract) ..... 1941 **81** 285
**Hutchens, John O., and Betty Podolsky.** The effect of nitrogen mustards on cleavage and development of Arbacia eggs (abstract) ..... 1948 **95** 251
**Hutchings, Lois M.** Combined effect of ultraviolet light and heat upon first cleavage of Arbacia eggs (abstract) ..... 1948 **95** 259
**Hutner, Seymour H.** *See* Wolf Vishniac (abstract) ..... 1950 **99** 328
*See* L. Provasoli (abstract) ..... 1948 **95** 260
**Hyman, Libbie H.** Further notes on the turbellarian fauna of the Atlantic coast of the United States ..... 1952 **103** 195

## I

**Ifft, John D.** The effect of environmental factors on the sperm cycle of Triturus viridescens ..... 1942 **83** 111
**Ifft, J. D., and Donald J. Zinn.** Polyphyodonty in the dogfish, Mustelus canis (abstract) ..... 1947 **93** 208
Tooth succession in the smooth dogfish, M. canis ..... 1948 **95** 100
**Inamdar, N. B.** Note on the reorientation within the spindle of the sex trivalent in a mantid ..... 1949 **97** 300
**Inoué, Shinya.** Studies of the Nereis egg jelly with the polarization microscope (abstract) ..... 1949 **97** 258
Effect of temperature on the birefringence of the mitotic spindle (abstract) ..... 1952 **103** 316
**Irving, Laurence.** *See* R. W. Root ..... 1941 **81** 307
*See* R. W. Root ..... 1943 **84** 207
*See* P. F. Scholander ..... 1950 **99** 225, 237, 259

**Ito, Susumu.** *See* J. R. Shaver (abstract) ..... 1952 **103** 309
*See* Katsuma Dan (abstract) ..... 1952 **103** 292
**Iverson, R.** *See* A. C. Giese ..... 1952 **103** 336

## J

**Jacobs, M. H.** Some ionic exchanges and equilibria of the erythrocyte (abstract) ..... 1950 **99** 311
Some differential permeability effects of n-butyl alcohol (abstract) ..... 1951 **101** 210
Some microchemical reactions of the erythrocyte (abstract) .. 1951 **101** 201
**Jacobs, M. H., and Dorothy R. Stewart.** Catalysis of ionic exchanges by bicarbonates (abstract) ..... 1941 **81** 294
**Jacobs, M. H., and H. N. Glassman.** Permeability of erythrocytes at different temperatures (abstract) ..... 1950 **99** 325
**Jacobs, M. H., and Marian Willis.** Preparation and properties of cation-permeable erythrocytes (abstract) ..... 1947 **93** 223
**Jacobs, M. H., Carolyn M. Stoudt, Marian W. Lefevre and W. E. Love.** How simple are the so-called "simple hemolysins"? (abstract) ..... 1949 **97** 228
**Jacobs, Merkel H.** *See* Dorothy R. Stewart (abstract) ..... 1941 **81** 294
*See* Martin G. Netsky (abstract) ..... 1941 **81** 295
*See* Lois H. Love (abstract) ..... 1947 **93** 198
*See* Lois H. Love (abstract) ..... 1948 **95** 269
*See* Marian Willis (abstract) ..... 1947 **93** 202
*See* Marian W. LeFevre (abstract) ..... 1948 **95** 268
*See* Warner E. Love (abstract) ..... 1948 **95** 268
**Jacobs, William P.** Control of elongation in the hypocotyl of the kidney bean (abstract) ..... 1950 **99** 329
Auxin effects in Bryopsis (abstract) ..... 1950 **99** 369
Auxin as the hormonal factor normally limiting the differentiation of xylem cells around the wound (abstract) ..... 1951 **101** 196
Auxin control of rhizoid formation in Bryopsis (abstract) .... 1951 **101** 238
Studies on cell differentiation: the role of auxin in algae, with particular reference to rhizoid formation in Bryopsis ..... 1951 **101** 300
**Jacobson, Marc.** *See* George T. Scott (abstract) ..... 1950 **99** 319
**Jakus, M. A., and C. E. Hall.** Electron microscope observations of trichocysts and cilia of Paramecium ..... 1946 **91** 141
**Jencks, William P.** *See* George Wald (abstract) ..... 1948 **95** 249
**Jenkins, Joseph C.** *See* Bertil G. Anderson ..... 1942 **83** 260
**Jenner, Charles E., and William L. Engels.** The significance of the dark period in the photoperiodic response of male juncos and white throated sparrows ..... 1952 **103** 345
**Jennings, H. S.** Paramecium bursaria: life history. I. Immaturity; maturity; and age ..... 1944 **86** 131
**Jennings, Joye J.** *See* W. R. Amberson (abstract) ..... 1944 **87** 161
**Jerome, Sr. Francis.** *See* K. A. Brownell ..... 1952 **102** 226
**Jeung, Nylan.** *See* E. L. Chambers (abstract) ..... 1948 **95** 252

**Jodrey, Louise H.** Studies on shell formation. III. Measurement of calcium deposition in shell and calcium turnover in mantle tissue, using the mantle-shell preparation and $Ca^{45}$.. 1953 **104** 398
**Jodrey, Louise H.** *See* Karl M. Wilbur..... 1952 **103** 269
**Johnson, Fred.** *See* P. F. Scholander..... 1950 **99** 237
**Johnson, Martin W.** Studies on the life history of the marine annelid, Nereis vexillosa..... 1943 **84** 106
**Johnson, M. W., and J. Bennett Olson.** The life history and biology of a marine harpacticoid copepod, Tisbe furcata Baird 1948 **95** 320
**Johnson, M. W., and Welldon M. Lewis.** Pelagic larval stages of the sand crabs, Emerita analoga Stimpson; Blepharipoda occidentalis Randall; and Lepidopa myops Stimpson..... 1942 **83** 67
**Johnson, M. W., F. Alton Everest and Robert W. Young.** The role of the snapping shrimps (Crangon and Synalpheus) in the production of underwater noise in the sea..... 1947 **93** 122
**Johnson, William H., and John Forbes Perkins, Jr.** Measurement of viscosity and elasticity of smooth muscles during contraction (abstract)..... 1951 **101** 210
**Johnson, William H., and John F. Perkins, Jr.** Studies on the visco-elastic properties of the anterior byssal retractor muscle of Mytilus edulis (abstract)..... 1952 **103** 286
**Johnson, William H., John F. Perkins, Jr. and Arnold M. Katz.** The frequency dependence of the mechanical properties of smooth muscles (abstract)..... 1952 **103** 293
**Johnson, William H.** *See* John F. Perkins, Jr. (abstract)..... 1951 **101** 202
**Johnston, Chambless.** *See* John T. Bonner (abstract)..... 1951 **101** 194
**Jones, Gwen M.** *See* F. A. Brown, Jr..... 1949 **96** 228
**Jørgensen, C. Barker.** Rates of feeding and oxygen uptake in some filter-feeding marine invertebrates (abstract)..... 1951 **101** 238
On the relation between water transport and food requirements in some filter-feeding marine invertebrates..... 1952 **103** 356
**Judson, Charles L.** *See* C. Ladd Prosser..... 1952 **102** 249
**Junqueira, L. C., A. Fajer, M. Rabinovitch and L. Frankenthal.** Biochemical and histochemical observations on the sexual dimorphism of mouse submaxillary glands (abstract)..... 1948 **95** 243

## K

**Kahn, Arthur J., and Alexander Sandow.** Effects of nitrate on muscle and nerve responses (abstract)..... 1950 **99** 316
**Kao, Chien-Yuan.** Micro-puncture and the localization of the subsequently-forming blastodisc in the unfertilized Fundulus egg (abstract)..... 1951 **101** 222
**Kao, Chien-Yuan, Robert Chambers and E. L. Chambers.** The internal hydrostatic pressure of the unfertilized Fundulus egg, activated by puncture (abstract)..... 1951 **101** 210
**Kao, Chien-Yuan.** *See* Robert Chambers (abstract)..... 1950 **99** 344
*See* Robert Chambers (abstract)..... 1951 **101** 206

**Karnovsky, M. L.** Studies in carbohydrate and lipid metabolism, using $C^{14}$-labelled glycerol (abstract) ..... 1951 **101** 203
The metabolism of alpha-glyceryl ethers in marine animals (abstract) ..... 1951 **101** 238
**Karnovsky, M. L.** *See* Leon S. Ciereszko (abstract) ..... 1951 **101** 207
**Katz, Arnold M.** *See* R. Guttman (abstract) ..... 1952 **103** 302
*See* William H. Johnson (abstract) ..... 1952 **103** 293
**Kayhart, Marion E.** X-ray mutations and fecundity of Mormoniella (abstract) ..... 1949 **97** 344
**Kaylor, C. T.** Studies on experimental haploidy in salamander larvae. II. Cytological studies on androgenetic eggs of Triturus viridescens ..... 1941 **81** 402
**Keister, Margaret L.** Physiology of tracheal filling in Sciara larvae (abstract) ..... 1949 **97** 267
Tracheal filling in Sciara larvae ..... 1949 **97** 323
**Keister, M. L.** *See* John B. Buck (abstract) ..... 1947 **93** 189
*See* John B. Buck ..... 1949 **97** 64
*See* John B. Buck (abstract) ..... 1950 **99** 315
**Keller, Rudolph.** Vital staining with ultraviolet and white light combined (abstract) ..... 1948 **95** 238
Vital staining by fluorescent dyes (abstract) ..... 1951 **101** 211
**Kelly, John W.** Effects of X-ray and trypsin on the metachromasy of heparin-basic protein combinations (abstract) .. 1951 **101** 223
Metachromasy associated with various eggs and ovaries (abstract) ..... 1951 **101** 223
**Kelly, Sally.** Respiration and iodine uptake by the brown algae (abstract) ..... 1950 **99** 370
Respiration and iodine uptake by Ascophyllum ..... 1953 **104** 138
**Kelly, Sally, and Norman A. Baily.** The uptake of radioactive iodine by Ascophyllum ..... 1951 **100** 188
Iodine studies in Ascophyllum, using radioactive iodine (abstract) ..... 1951 **101** 239
**Keltch, A. K., and G. H. A. Clowes.** On the relation between oxygen consumption, fertilization membrane formation and cell division in artificially fertilized Arbacia eggs (abstract) 1947 **93** 195
**Keltch, A. K., C. F. Strittmatter, C. P. Walters and G. H. A. Clowes.** Oxidative phosphorylation by a cell-free particulate enzyme system from unfertilized Arbacia eggs (abstract) ... 1949 **97** 242
**Keltch, A. K., C. P. Walters and G. H. A. Clowes.** Effect of dinitrocresol on oxygen consumption and cell division in artificially fertilized, as compared with sperm fertilized Arbacia eggs (abstract) ..... 1947 **93** 196
**Keltch, A. K., M. P. Smythe and G. H. A. Clowes.** Phosphorus uptake of cell-free homogenates of unfertilized Arbacia eggs under aerobic and anaerobic conditions (abstract) ..... 1951 **101** 220
**Keltch, A. K., Philipp Strittmatter, C. P. Walters and G. H. A. Clowes.** Action of a series of nitro- and halo-phenols on the respiration and cell division of Mactra solidissima (abstract) ..... 1950 **99** 334

**Keltch, A. K.** *See* G. H. A. Clowes (abstract) ..... 1949 97 234
*See* G. H. A. Clowes (abstract) ..... 1950 99 335
*See* G. H. A. Clowes (abstract) ..... 1951 101 219, 220
*See* Philipp Strittmatter (abstract) ..... 1950 99 333
**Kemp, Norman E.** Regeneration in isolated and fused pieces of Clava leptostyla ..... 1952 102 141
**Kempton, Rudolph T.** Urea reabsorption in the smooth dogfish kidney (abstract) ..... 1948 95 253
Studies on the elasmobranch kidney. II. Reabsorption of urea by the smooth dogfish, Mustelus canis ..... 1953 104 45
**Kempton, Rudolph T., and Burton Steckler.** Urea excretion in the smooth dogfish (abstract) ..... 1947 93 197
**Kempton, Rudolph T., and Leonora Berman.** Renal chloride excretion by the smooth dogfish, M. canis (abstract) ..... 1950 99 346
**Kenk, Roman.** Ecological observations on two Puerto Rican echinoderms, Mellita lata and Astropecten marginatus ..... 1944 87 177
**Kent, Donald E.** *See* D. P. Costello (abstract) ..... 1952 103 298
**Kidder, George W., and Virginia C. Dewey.** Thiamin and Tetrahymena ..... 1944 87 121
Studies on the biochemistry of Tetrahymena:
IV. Amino acids and their relation to the biosynthesis of thiamin ..... 1945 89 131
VII. Riboflavin, pantothen, biotin, niacin and pyridoxine in the growth of T. geleii W ..... 1945 89 229
**Kidder, G. W.** *See* C. Lloyd Claff ..... 1941 81 221
*See* V. C. Dewey (abstract) ..... 1941 81 285
**Kille, Frank R.** Regeneration of the reproductive system following binary fission in the sea cucumber, Holothuria parvula Selenka ..... 1942 83 55
**Kimberley, Paul F.** Implications of cerebro-spinal fluid distribution in the therapy of the healing arts (abstract) ..... 1948 95 261
**Kind, C. Albert.** Marine invertebrate phosphatases (abstract) ... 1949 97 262
Effect of divalent ions on echinoderm phosphatases (abstract). 1950 99 370
**King, H. D.** *See* Leo Loeb ..... 1943 84 1
**King, John W.** The effect of forced aeration on the longevity of Laminaria (abstract) ..... 1951 101 224
On the reproductive rate of two algal species after treatment with growth-affecting substances (abstract) ..... 1952 103 304
**King, Joseph E.** A study of the reproductive organs of the common marine shrimp, Penaeus setiferus ..... 1948 94 244
**King, J. E.** *See* W. W. Anderson ..... 1949 96 168
**Kisch, Bruno.** Cardiographic studies on the fish heart (abstract) 1947 93 208
A method to immobilize fish for cardiac and other experiments with procaine (abstract) ..... 1947 93 208
Studies on the red blood cells of fish (abstract) ..... 1948 95 266
Electrographic observations on sea gulls (abstract) ..... 1949 97 243
An unknown type of hemolysis (abstract) ..... 1949 97 243
The skin as an organ of excretion in squids (abstract) ..... 1951 101 224
**Kisliuk, Roy.** *See* Wolf Vishniac (abstract) ..... 1950 99 328

**Kleinholz, L. H.** A method for removal of the sinus gland from the eyestalks of crustaceans ..... 1947 **93** 52
**Kleinholz, L. H., and Barbara Chase Little.** Studies in the regulation of blood sugar concentration in crustaceans. I. Normal values and experimental hyperglycemia in Libinia emarginata ..... 1949 **96** 218
**Kleinholz, L. H., V. J. Havel and R. Reichart.** Studies in the regulation of blood sugar concentration in crustaceans. II. Experimental hyperglycemia and the regulatory mechanisms. 1950 **99** 454
**Klotz, I. M., A. H. Schlesinger and F. Tietze.** Comparison of the binding ability of hemocyanin and serum albumin for organic ions (abstract) ..... 1947 **93** 218
Comparison of the binding ability of hemocyanin and serum albumin for organic ions ..... 1948 **94** 40
**Klotz, I. M., and F. Tietze.** Complexes of hemocyanin and of hemerythrin with small ions (abstract) ..... 1948 **95** 275
**Klotz, Irving M.** *See* Edwin H. Battley (abstract) ..... 1951 **101** 215
*See* Robert A. Resnik (abstract) ..... 1951 **101** 227
**Knowles, Francis G. W.** The control of retinal pigment migration in Leander serratus ..... 1950 **98** 66
**Knowlton, Frank P.** Observations on the dual contraction of crustacean muscle ..... 1942 **82** 207
**Kohn, Robert R.** The influence of pituitary posterior lobe preparations on the action of phenolases *in vitro* (abstract) ..... 1952 **103** 304
**Kohn, Robert R.** *See* Paul A. Wright (abstract) ..... 1952 **103** 312
**Kollen, S.** *See* W. W. Wainio (abstract) ..... 1947 **93** 214
**Kollros, J. J.** *See* J. M. Tobias ..... 1946 **91** 247
**Kopak, M. J.** The action of ammonium chloride on the surface membranes of Arbacia eggs (abstract) ..... 1948 **95** 267
The inhibition of development of Arbacia eggs by ammonium chloride (abstract) ..... 1948 **95** 267
**Koran, P.** *See* Basil Bailey ..... 1942 **83** 129
**Korda, Frances H.** *See* A. Glenn Richards ..... 1948 **94** 212
**Koza, Robert W.** *See* Nyra J. Harrington ..... 1951 **101** 138
**Kozloff, Eugene N.** Cochliophilus depressus, gen.nov., sp.nov. and C. minor, sp.nov., holotrichous ciliates from the mantle cavity of Phytia setifera (Cooper) ..... 1945 **89** 95
Heterocineta phoronopsidis ..... 1945 **89** 180
Studies on ciliates of the family Ancistrocomidae, Chatton and Lwoff (order Holotricha, sub-order Thigmotricha):
I. Hypocomina tagularum sp.nov. and Crebricoma gen.nov.. 1946 **90** 1
II. Hypocomides botulae sp.nov.; H. parva sp.nov.; H. kelliae sp.nov. and Insignicoma venusta gen.nov., sp.nov..... 1946 **90** 200
III. Ancistrocoma pelseneeri C. and L.; A. dissimilis sp.nov.; and Hypocomagalma pholadidis sp.nov..... 1946 **91** 189
IV. Heterocineta janickii Jarocki; H. goniobasidis sp.nov.; H. fluminicolae sp.nov. and Enerthecoma properans Jarocki 1946 **91** 200
**Krahl, M. E.** Metabolic activities and cleavage of eggs of the sea urchin, A. punctulata ..... 1950 **98** 175

**Krauss, Max.** A mucin clot reaction with sea urchin fertilizin.... 1949 96 74
**Kreezer, E. H.** *See* G. L. Kreezer (abstract)..... 1947 93 197
**Kreezer, G. L., and E. H. Kreezer.** Transient response of luminous bacteria to sudden temperature increments and related experiments on drug action and protein denaturation (abstract)..... 1947 93 197
**Krugelis, Edith Judith.** Distribution and properties of intracellular alkaline phosphatases..... 1946 90 220
Alkaline phosphatase activity in developmental stages of Arbacia (abstract)..... 1947 93 209
Alkaline phosphatase activity in early development of amphibians (abstract)..... 1947 93 215
Alkaline phosphatase activity in oöcytes of various marine invertebrates (abstract)..... 1947 93 209
**Kun, Ernest.** Biochemical properties of succinoxidase from Salmonella aertrycke (abstract)..... 1949 97 222
**Kuntz, Eloise.** The effect of sinus gland extract on certain enzyme systems (abstract)..... 1947 93 198
Distribution of $P^{32}$ in Callinectes during the molting cycle (abstract)..... 1951 101 211
**Kutsky, Phyllis B.** *See* William E. Berg..... 1951 101 47
**Kyer, Donald L.** The influence of the sinus glands on gastrolith formation in the crayfish..... 1942 82 68

## L

**Lafleur, L. J.** The founding of ant colonies..... 1941 81 392
**Lajtha, Abel.** Labile P in nucleic acids (abstract)..... 1949 97 224
**Lanham, Urless N.** *See* F. B. Sumner..... 1942 82 313
**Lansing, Albert I.** Increase of cortical calcium with age in the cells of a rotifer, Euchlanis dilatata; a planarian, Phagocata sp.; and a toad, Bufo fowleri; as shown by the micro-incineration technique..... 1942 82 392
Increase of cortical calcium with age in the cells of Elodea canadensis..... 1942 82 385
Ribonucleic acid at cell surfaces and its possible significance (abstract)..... 1949 97 263
**Lansing, A. I., J. Hillier and T. B. Rosenthal.** Electron microscopy of some marine egg inclusions (abstract)..... 1952 103 294
**Lansing, A. I.** *See* J. Hillier (abstract)..... 1952 103 293
**Lavin, George I.** Recent developments in ultraviolet microscopy (abstract)..... 1944 87 160
Microscopy in the ultraviolet visible and infrared (abstract).. 1950 99 342
**Lavin, George I.** *See* E. B. Harvey..... 1944 86 163
*See* Hope Hibbard..... 1945 89 157
*See* E. B. Harvey (abstract)..... 1950 99 360
*See* Ruth P. Alscher (abstract)..... 1951 101 215
**Lawson, Chester A.** Germarial differences in the production of aphid types..... 1943 85 60

**Lazarow, Arnold.** The chemical organization of the cytoplasm (abstract) ..... 1944 **87** 156
Further studies on the mechanism of alloxan action: the reaction of alloxan with sulfhydryl: the glutathione content of islet tissue (abstract) ..... 1948 **95** 276
Sulfhydryl metabolism of the beta cell and its relationship to the development of diabetes (abstract) ..... 1948 **95** 239
**Lazarow, Arnold, and Jack Berman.** The production of diabetes in the toadfish with alloxan (abstract) ..... 1947 **93** 219
The insulin content of the islet tissue of alloxan-diabetic fish (abstract) ..... 1948 **95** 276
**Lazarow, A., and S. J. Cooperstein.** Enzymes of the isolated islet tissue of the toadfish, Opsanus tau: cytochrome oxidase and succinic dehydrogenase (abstract) ..... 1950 **99** 361
Reduction of janus green by liver cell constituents and a proposed mechanism for the supravital staining of mitochondria (abstract) ..... 1950 **99** 322
Studies on the isolated islet tissue of fish. I. The cytochrome oxidase and succinic dehydrogenase contents of normal toadfish (Opsanus tau) ..... 1951 **100** 191
**Lazarow, Arnold.** *See* S. J. Cooperstein (abstract) ..... 1950 **99** 321, 356
*See* S. J. Cooperstein ..... 1951 **100** 159
**Lazo-Wasem, Edgar A., and George F. Weisel.** The comparative effects of fish and beef pituitary on retention of water by frogs ..... 1952 **102** 25
**Le Baron, George, Jr.** *See* Allan Scott (abstract) ..... 1950 **99** 363
**Lee, Helen Tsui-Ying.** A preliminary histological study of the insemination reaction in Drosophila gibberosa ..... 1950 **98** 25
**Lee, Richard E.** The hypophysis of the broad-billed swordfish, Xiphias gladius L. ..... 1942 **82** 401
A quantitative survey of the invertebrate bottom fauna in Menemsha Bight ..... 1944 **86** 83
**Lefevre, Marian W., and M. H. Jacobs.** The nature of the hemolytic effect of silver (abstract) ..... 1948 **95** 268
**Lefevre, Marian W.** *See* M. H. Jacobs (abstract) ..... 1949 **97** 228
**Lefevre, Paul G.** Certain chemical factors influencing artificial activation of Nereis eggs ..... 1945 **89** 144
Evidence of active transfer across the human erythrocyte membrane (abstract) ..... 1947 **93** 224
Comparison of frog nerve and squid axon with respect to the measurement of accommodation (abstract) ..... 1948 **95** 256
The doubtful character of "break" excitation in skeletal muscle (abstract) ..... 1948 **95** 256
Further chemical aspects of the sensitization and activation reactions of Nereis eggs ..... 1948 **95** 333
**Lehman, H. E.** A histological study of Syndisyrinx franciscanus, gen. et sp.nov.; an endoparasitic rhabdocoel of the sea urchin, Strongylocentrotus franciscanus ..... 1946 **91** 295

**Lehman, Harvey Eugene.** An analysis of the dynamic factors responsible for the phenomenon of pigment suppression in salamander larvae ..... 1951 **100** 127
**Lein, Joseph.** A new concept of the action of dicumarol (abstract) ..... 1948 **95** 277
**Leonard, E.** *See* C. A. Villee (abstract) ..... 1948 **95** 279, 280
**Leonard, Lawrence M.** *See* Robert Chambers (abstract) ..... 1949 **97** 233
**Leone, Charles A.** Systematic serology among certain insect species ..... 1947 **93** 64
Comparative serology of some brachyuran Crustacea and studies in hemocyanin correspondence ..... 1949 **97** 273
Serological systematics of some palinuran and astacuran Crustacea ..... 1950 **98** 122
A serological analysis of the systematic relationship of the brachyuran crab, Geryon quinquedens ..... 1951 **100** 44
**Leone, Charles A.** *See* Carlon W. Pryor ..... 1952 **103** 433
**Leuchtenberger, Cecilie, and Franz Schrader.** Relationship between nuclear volumes, amount of intranuclear proteins and desoxyribonucleic acid (DNA) in various rat cells ..... 1951 **101** 95
**Levine, Harry P.** Species differences in rates of osmotic hemolysis within the genus Peromyscus ..... 1943 **85** 52
**Levy, Milton, and Angelo E. Benaglia.** The denaturation of ricin as affected by pH and temperature (abstract) ..... 1950 **99** 323
**Levy, M., and Evelyn Slobodiansky.** The order of the amino-acids in silk: an application of isotopic derivative technique (abstract) ..... 1948 **95** 240
**Levy, M., and Robert C. Warner.** Effect of pH upon the rate of denaturation of several proteins (abstract) ..... 1950 **99** 337
**Levy, Milton.** *See* Robert C. Warner (abstract) ..... 1950 **99** 336
**Lewin, Ralph A.** Genetics of Chlamydomonas: Paving the way (abstract) ..... 1949 **97** 243
Studies on the flagella of algae. I. General observations on Chlamydomonas moewusii Gerloff ..... 1952 **103** 74
**Lewis, Warren H.** The superficial gel layer and its role in development (abstract) ..... 1944 **87** 154
**Lewis, Welldon M.** *See* Martin W. Johnson ..... 1942 **83** 67
**Libet, Benjamin.** Localization of adenosinetriphosphatase (ATPase) in the giant nerve fiber of the squid (abstract) ..... 1947 **93** 219
Enzyme localization in the giant nerve fiber of the squid (abstract) ..... 1948 **95** 277
**Libet, B., H. J. Ralston and B. Feinstein.** The effect of stretch on action potentials in muscle (abstract) ..... 1951 **101** 194
**Lichtenstein, Robert.** *See* Claude A. Villee (abstract) ..... 1950 **99** 365
**Lieb, Joel R.** *See* Charles G. Wilber (abstract) ..... 1951 **101** 234
**Liebman, Emil.** The leucocytes of Arbacia punctulata ..... 1950 **98** 46
**Linderstrøm-Lang, K.** *See* Claude A. Villee (abstract) ..... 1950 **99** 322
**Lindner, Milton J.** *See* William W. Anderson ..... 1949 **96** 168
**Little, Barbara Chase.** *See* L. H. Kleinholz ..... 1949 **96** 218
**Little, Elbert P.** *See* Titus C. Evans (abstract) ..... 1941 **81** 291

**Liu, C. K.** Germ cell formation of Tubularia crocea, with special reference to the germ-plasm theory (abstract) ..... 1947 **93** 198
X-ray radiation effects on the restitution of dissociated Microciona (abstract) ..... 1948 **95** 259
**Loeb, Leo, H. D. King and T. H. Blumenthal.** Transplantation and individuality differentials in inbred strains of rats ..... 1943 **84** 1
**Loefer, John B., and Roy B. Mefferd, Jr.** Application of the most probable number method to determine the heat sensitivity of protozoa ..... 1952 **103** 364
**Loos, Gordon M.** *See* H. F. Blum (abstract) ..... 1949 **97** 232
*See* H. F. Blum (abstract) ..... 1950 **99** 342
**Loosanoff, Victor L.** Reproductive cycle in Cyprina islandica ....1953 **104** 146
Seasonal gonadal changes in the adult oysters of Long Island Sound ..... 1942 **82** 195
**Loosanoff, V. L., and Charles A. Nomejko.** Existence of physiologically different races of oysters, Crassostrea virginica .. 1951 **101** 151
Feeding of oysters in relation to tidal stages and to periods of light and darkness ..... 1946 **90** 244
Growth of oysters, O. virginica, during different months ..... 1949 **97** 82
**Loosanoff, V. L., and Harry C. Davis.** Conditioning Venus mercenaria for spawning in winter and breeding its larvae in the laboratory ..... 1950 **98** 60
Temperature requirements for maturation of gonads of northern oysters ..... 1952 **103** 80
**Loosanoff, V. L., and James B. Engle.** Accumulation and discharge of spawn by oysters living at different depths ..... 1942 **82** 413
Polydora in oysters suspended in water ..... 1943 **85** 69
**Love, Lois H.** Hemolytic action of anionic detergents (abstract) 1949 **97** 227
**Love, Lois H., and M. H Jacobs.** Observations on the hemolytic effect of sodium dodecyl sulfate (abstract) ..... 1948 **95** 269
**Love, Lois H., W. E. Love and M. H. Jacobs.** Observation on the hemolytic action of urea and sodium salicylate (abstract) 1947 **93** 198
**Love, Warner E.** The nature of the hemolytic action of dodecyl ammonium chloride (abstract) ..... 1951 **101** 200
**Love, W. E., and M. H. Jacobs.** Reversible sphering of erythrocytes (abstract) ..... 1948 **95** 268
**Love, Warner E.** *See* Lois H. Love (abstract) ..... 1947 **93** 198
**Love, Warner E.** *See* Marian Willis (abstract) ..... 1947 **93** 202
*See* M. H. Jacobs (abstract) ..... 1949 **97** 228
**Lovelace, Roberta.** Feulgen-positive reaction of oil droplets in Nereis eggs (abstract) ..... 1949 **97** 259
A cytological study of heat-activated Nereis eggs (abstract) ...1951 **101** 224
Some cytological effects of heat on Nereis eggs (abstract) .... 1951 **101** 225
**Lovell, J. B.** *See* L. E. Chadwick ..... 1953 **104** 323
**Lowens, M.** *See* C. A. Villee (abstract) ..... 1948 **95** 279
**Lu, Kiao-Hung.** *See* J. H. Bodine ..... 1951 **100** 153
*See* J. H. Bodine ..... 1952 **102** 16
**Lucas, A. M., and J. Snedecor.** Coordination of ciliary movement in the Modiolus gill (abstract) ..... 1941 **81** 290

**Luyet, B. J.** Effects of ultra-rapid freezing on mammalian erythrocytes (abstract) ..... 1949 97 269
**Lybing, Siguar.** *See* Hans Borei ..... 1949 96 107
**Lyman, E. D.** *See* D. M. Pace ..... 1947 92 210
**Lynch, William F.** Factors influencing metamorphosis of Bugula larvae ..... 1952 103 369
Modification of responses of two species of Bugula larvae from Woods Hole, Mass., to light and gravity: ecological aspects of the behavior of Bugula larvae ..... 1949 97 302
The behavior and metamorphosis of the larva of Bugula neritina Linn. Experimental modification of the length of the free-swimming period and the responses of the larvae to light and gravity ..... 1947 92 115
**Lynn, W. Gardner.** The effects of thiourea and phenylthiourea upon the development of Plethodon cinereus (abstract) ..... 1947 93 199
The effects of thiourea and phenylthiourea upon the development of Eleutherodactylus ricordii ..... 1948 94 1
**Lynn, W. Gardner, and Theodor von Brand.** Studies on the oxygen consumption and water metabolism of turtle embryos 1945 88 112

## M

**MacDonald, Sr. Elizabeth Seton.** Glucose metabolism in marine annelids (abstract) ..... 1949 97 246
**MacDonald, Sr. Elizabeth Seton, and Charles G. Wilber.** A comparative study of iron content in marine invertebrates (abstract) ..... 1947 93 209
Glutathione in the body fluids of marine worms (abstract) ... 1951 101 225
**Macklin, Charles C.** Mitochondrial arrangement in alveolar epicytes and foam cells of mouse lungs, particularly as induced by vacuoloids ..... 1949 96 173
**Magginitie, G. E.** The size of the mesh openings in mucous feeding nets of marine animals ..... 1945 88 107
**Mahr, Merle M.** Precipitin reactions and species specificity of Monezia expansa and M. benedeni ..... 1942 83 88
**Makino, Sajiro.** A study of the chromosomes in two species of bats (Chiroptera) ..... 1948 94 275
**Maluf, N. S. R.** Experimental cytological evidence for an outward secretion of water by the nephric tubule of the crayfish 1941 81 127
Micturition in the crayfish and further observations on the anatomy of the nephron of this animal ..... 1941 81 134
Secretion of inulin, xylose and dyes, and its bearing on the manner of urine formation by the kidney of the crayfish ..... 1941 81 235
**Manery, J. F., K. C. Fisher, D. R. H. Gourley, D. L. Wilson and M. F. J. Taylor.** The influence of carbohydrates and insulin on the potassium content of leucocytes and muscle (abstract) ..... 1950 99 312
**Mann, Elizabeth Rogers.** *See* Theodor von Brand ..... 1948 95 199
**Manning, Winston M.** *See* Harold H. Strain ..... 1944 86 169

**Marshak, Alfred.** Activity of desoxyribonuclease in nuclear fission and mitosis by use of d-usnic acid (abstract) ..... 1949 **97** 223
A nuclear precursor to ribo- and desoxyribonucleic acids (abstract) ..... 1948 **95** 244
Comparison of the base composition of nucleic acids of nuclei and cytoplasm of different mammalian tissues (abstract) ... 1950 **99** 332
Recovery from ultraviolet light-induced delay in cleavage of Arbacia eggs by irradiation with visible light ..... 1949 **97** 315
**Marshak, Alfred, and C. Marshak.** Desoxyribonucleic acid in Arbacia eggs, determined by isotope dilution (abstract) .... 1952 **103** 294
Desoxyribonucleic acid in the nuclei of Arbacia eggs (abstract) 1952 **103** 295
**Marsland, Douglas.** Mechanism of pigment displacement in unicellular chromatophores ..... 1944 **87** 252
The effects of pressure on the insemination reactions of Arbacia eggs (abstract) ..... 1948 **95** 251
**Martin, Hugh E., and Laura Hare.** The nutritive requirements of Tenebrio molitor larvae ..... 1942 **83** 428
**Martin, W. R.** *See* C. W. Sheppard (abstract) ..... 1948 **95** 287
**Marvel, Rosemary M., and Kenneth C. Fisher.** Developmental changes in the viability of squid embryos after subjection to cyanide ..... 1948 **94** 45
**Mast, S. O.** The food vacuole in Paramecium ..... 1947 **92** 31
The hydrogen ion concentration of the content of the food vacuoles and the cytoplasm in Amoeba, and other phenomena concerning the food vacuoles ..... 1942 **83** 173
**Mast, S. O., and W. J. Bowen.** The food vacuole in the Peritricha, with special reference to the hydrogen ion concentration of its content and of the cytoplasm ..... 1944 **87** 188
**Mason, H. S., and E. F. Davis.** Status of the chemistry of Cypridina luciferin (abstract) ..... 1951 **101** 195
**Matthews, Donald C.** *See* Robert W. Hiatt ..... 1953 **104** 28
**Matthews, Samuel A., and Frank Ash.** The effect of parrot fish thyroid gland on metamorphosis in frog tadpoles ..... 1951 **101** 157
**Mathews, Margie M.** *See* Harold F. Blum (abstract) ..... 1950 **99** 330
**Mattox, N. T., and Sears Crowell.** A new commensal hydroid of the mantle cavity of an oyster ..... 1951 **101** 162
**Mattson, Arnold M.** *See* Albert S. Perry ..... 1953 **104** 426
**Maynard, Donald M., Jr.** Activity in a crustacean ganglion. I. Cardio-inhibition and acceleration in Panulirus argus ..... 1953 **104** 156
**Mazia, Daniel, and Gertrude Blumenthal.** Enzyme activity and radiation sensitivity of enzyme-substrate films (abstract) ... 1948 **95** 283
**Mazia, Daniel, and Katsuma Dan.** The isolation and chemical characterization of the mitotic apparatus of dividing cells (abstract) ..... 1952 **103** 283
**Mazia, Daniel, Gertrude Blumenthal and Eleanore Benson.** The activity and distribution of desoxyribonuclease and phosphatases in the early development of Arbacia punctulata (abstract) ..... 1948 **95** 250

**Mazia, Daniel, Philip A. Brewer and Max Alfert.** The cytological staining and measurement of protein with mercuric bromphenol blue ..... 1953 104 57
**Mazia, Daniel.** *See* Henry Di Stefano (abstract) ..... 1952 103 299
*See* Jay Barton (abstract) ..... 1949 97 267
*See* Katsuma Dan (abstract) ..... 1952 103 283
**McBlair, William.** *See* Edward D. Goldberg ..... 1951 101 84
**McKenzie, John.** *See* Victor A. Greulach ..... 1951 101 285
**Mefferd, Roy B., Jr.** *See* John B. Loefer ..... 1952 103 364
**Mehler, Alan H.** Reactions catalyzed by isolated chloroplasts (abstract) ..... 1950 99 327
Reactions related to photosynthesis and respiration (abstract) . 1950 99 371
**Mehler, Alan H., and Hans Gaffron.** Oxidation and reductions catalyzed by isolated chloroplasts (abstract) ..... 1950 99 318
**Mehlman, Benjamin, and Theodor von Brand.** Further studies on the anaerobic metabolism of some freshwater snails ..... 1951 100 199
**Mehlman, Benjamin.** *See* Theodor von Brand ..... 1950 98 266
*See* Theodor von Brand ..... 1953 104 301
**Meinkoth, Norman A.** *See* Elizabeth Foster ..... 1947 93 114
**Mende, Thomas.** *See* Edward L. Chambers (abstract) ..... 1950 99 316
**Mendes, E. G.** *See* E. S. G. Barron ..... 1948 94 267
**Mendes, Marta Vanucci.** Histology of the corpora allata of Melanoplus differentialis (Orthoptera: Saltatoria) ..... 1948 94 194
**Mendoza, Guillermo.** The reproductive cycle of the viviparous teleost, Neotoca bilineata; a member of the family Goodeidae:
III. The germ cell cycle ..... 1941 81 70
IV. The germinal tissue ..... 1943 84 87
**Menkin, Valy.** Effect and significance of various steroids and of ACTH (cortico-tropin) on the cleavage pattern of Arbacia ova (abstract) ..... 1952 103 305
Effect of necrosin on cleavage for fertilized sea urchin ova (abstract) ..... 1949 97 244
Studies on the chemical basis of fever (abstract) ..... 1944 87 163
**Menzies, Robert J., and Richard J. Waidzunas.** Post-embryonic growth changes in the isopod Pentidotea resecata Stimpson, with remarks on their taxonomic significance ..... 1948 95 107
**Mercer, E. H., and M. F. Day.** The fine structure of the peritrophic membrane of certain insects ..... 1952 103 384
**Merwin, R. M.** *See* W. C. Allee ..... 1942 83 245
**Metcalf, John.** *See* W. R. Amberson (abstract) ..... 1949 97 231
**Metz, Charles B.** The agglutination of starfish sperm by fertilizin 1945 89 84
The inactivation of fertilizin and its conversion to the "univalent" form by X-rays and ultraviolet light ..... 1942 82 446
**Metz, C. B., and Edna M. Fusco.** Mating reactions between living and lyophilized Paramecia of opposite mating types (abstract) ..... 1949 97 245
**Metz, C. B., and Joanne E. Donovan.** Fertilizin from eggs of the clam, Mactra solidissima (abstract) ..... 1949 97 257
Specific fertilizin agglutination of dead sperm (abstract) ..... 1951 101 202

**Metz, C. B., and Mary T. Foley.** Fertilization studies on a non-conjugating race of Paramecium aurelia (abstract) ..... 1947 93 210
**Metz, C. B., and Winifred Butterfield.** Action of various enzymes on the mating type substances of Paramecium calkinsi 1951 101 99
**Metz, C. B., Dorothy R. Pitelka and Jane A. Westfall.** The fibrillar systems of ciliates as revealed by the electron microscope. I. Paramecium ..... 1953 104 408
**Metz, C. B.** *See* Dorothy R. Pitelka (abstract) ..... 1952 103 282
*See* Hans Borei (abstract) ..... 1951 101 216
*See* H. D. Hoberman (abstract) ..... 1951 101 209
**Michaelis, Leonor.** Theory of metachromatic staining (abstract) 1944 87 155
Fundamental principles in oxidation-reduction ..... 1949 96 293
**Mihalyi, Elemer.** On the structure of fibrin clots (abstract) .... 1949 97 227
**Millar, F. K.** *See* F. C. Steward (abstract) ..... 1950 99 309
**Miller, James A., Jr.** Are nutritive substances essential for hydranth formation in Tubularia? (abstract) ..... 1950 99 361
pH estimation in reconstituting pieces of Tubularia stems (abstract) ..... 1948 95 243
Some effects of covering the perisarc upon tubularian regeneration ..... 1942 83 416
**Miller, Milton A.** Toxic effects of copper on attachment and growth of Bugula neritina ..... 1946 90 122
**Miller, M. A., J. Crapean and W. Forest Whedon.** The role of slime film in the attachment of fouling organisms ..... 1948 94 143
**Millott, Norman.** The sensitivity to light, reactions to shading, pigmentation and color change of the sea urchin, Diadema antillarum Philippi (abstract) ..... 1950 99 329
Integumentary pigmentation and the coelomic fluid of Thyone briareus Lesueur (abstract) ..... 1950 99 343
**Milne, Lorus J.** Preparing an animated diagram of somatic mitosis (abstract) ..... 1941 81 290
**Milne, L. J., and Margery J. Milne.** Invertebrate photoreceptors (abstract) ..... 1950 99 342
**Mitchell, C. J.** *See* A. M. Clark ..... 1952 103 170
**Mittler, Sidney.** Influence of genetic environment on the reduction of bristles by the dichaete gene in Drosophila melanogaster ..... 1948 94 208
**Monroy, Alberto, and Giuseppe Montalenti.** Variations of the submicroscopic structure of the cortical layer of fertilized and parthenogenetic sea urchin eggs ..... 1947 92 151
**Monroy, A., and John Runnström.** Further studies on the action of a cytoplasmic component on jelly coat and membrane formation in Arbacia punctulata (abstract) ..... 1950 99 339
**Montalenti, Giuseppe.** *See* Alberto Monroy ..... 1947 92 151
**Moog, Florence.** The influence of temperature on reconstitution in Tubularia (abstract) ..... 1941 81 300
Localization of alkaline and acid phosphatases in the early embryogenesis of the chick ..... 1944 86 51

**Moog, Florence.** *See* S. Spiegelman ..... 1944 87 227
*See* S. Spiegelman ..... 1945 89 122
*See* Thomas S. Hall (abstract) ..... 1947 93 213
**Moore, Anna-Betty Clark.** The development of reciprocal androgenetic frog hybrids ..... 1950 99 88
**Moore, George M.** Progress report on investigations of the Nudibranchiata of New England (abstract) ..... 1950 99 352
**Moore, Hilary B.** The relation between the scattering layer and the Euphausiacea ..... 1950 99 181
**Moore, I.** *See* K. A. Brownell ..... 1952 102 226
**Moore, John A.** Embryonic temperature tolerance and rate of development in Rana catesbiana ..... 1942 83 375
**Moore, John A., and Anna-Betty C. Moore.** Studies in the development of frog hybrids. IV. Competence of gastrula ectoderm in androgenetic hybrids ..... 1953 104 68
**Moreau, Louis.** *See* L. V. Heilbrunn (abstract) ..... 1947 93 223
**Morgan, Thomas Hunt.** Cross- and self-fertilization in the ascidian Molgula manhattensis ..... 1942 82 172
Cross- and self-fertilization in the ascidian Styela ..... 1942 82 161
Do spermatozoa penetrate the membrane of self-inseminated eggs of Ciona and Styela? ..... 1942 82 455
The conditions that lead to normal or abnormal development of Ciona ..... 1945 88 50
**Morrison, Katherine C.** *See* Peter R. Morrison ..... 1952 103 395
**Morrison, Peter R.** Physiological observations on water loss and oxygen consumption in Peripatus ..... 1946 91 181
**Morrison, Peter R., and Katherine C. Morrison.** Bleeding and coagulation in some Bermudan crustaceans ..... 1952 103 395
**Morrison, Peter R., Charles Scudder and William Blatt, Jr.** The solubilities of some vertebrate fibrinogens in plasma-ethanol mixtures ..... 1951 101 171
**Mortensen, Edith and Paul S. Galtsoff.** Behavior and tube-building habits of Polydora ligni (abstract) ..... 1944 87 164
**Moulton, James M.** Development of Menidia-Fundulus hybrids (abstract) ..... 1949 97 344
**Mullins, Lorin J.** The permeability of yeast cells to radiophosphate ..... 1942 83 326
**Myers, John L.** *See* Howard J. Curtis (abstract) ..... 1950 99 350

## N

**Nachmansohn, David.** Effect of anti-cholinesterases on conduction (abstract) ..... 1948 95 241
Electrical potential and activity of choline esterase in nerves (program title only) ..... 1941 81 286
On the energy source of the nerve action potential (abstract) . 1944 87 158
The curare effect and axonal conduction ..... 1951 101 199
**Narahara, H. T.** *See* E. S. G. Barron ..... 1948 94 267

**Nathanson, Neal.** *See* George Wald (abstract) ..... 1948 **95** 249
*See* Claude A. Villee (abstract) ..... 1950 **99** 365, 366
**Naughton, John J.** *See* Robert W. Hiatt ..... 1953 **104** 28
**Navez, A. E., J. D. Crawford, D. Benedict and A. B. Du Bois.** On metabolism of the heart of Venus mercenaria (abstract) . 1941 **81** 289
**Nelson, Leonard.** Usnic acid, an antibiotic, and sperm metabolism (abstract) ..... 1948 **95** 286
Sulfhydryl inhibitors and a seminal fluid factor in sperm respiration (abstract) ..... 1949 **97** 259
**Netsky, M. G., and M. H. Jacobs.** Some effects of desoxycorticosterone and related compounds on the mammalian red cell (abstract) ..... 1941 **81** 295
**Nichol, Charles A.** Studies on the distribution of vitamin B-12 (abstract) ..... 1952 **103** 317
**Nicoll, Paul A.** Vascular patterns and behavior in typical parapodia of Nereis virens and N. limbata (abstract) ..... 1950 **99** 350
**Nie, Dashu.** Thecal morphology of some dinoflagellates of Woods Hole, with special reference to the "ventral area" (abstract) 1947 **93** 210
**Noël, Elisabeth.** *See* M. Sussman ..... 1952 **103** 259
**Nolan, M. O.** *See* Theodor von Brand ..... 1948 **95** 199
**Noland, Jerre L.** Determination of amino acids in invertebrates (abstract) ..... 1949 **97** 263
**Nomejko, Charles A.** *See* Victor L. Loosanoff ..... 1946 **90** 244
*See* V. L. Loosanoff ..... 1949 **97** 82
*See* V. L. Loosanoff ..... 1951 **101** 151
**Novitski, E. and G. Rush.** Viability and fertility of Drosophila exposed to sub-zero temperatures ..... 1949 **97** 150

## O

**Oberholzer, Rudi J. H.** Influence of various potassium concentrations on the oxygen consumption of frog nerves (abstract) 1951 **101** 198
**Obreshkove, V.** The action of acetylcholine, atropine and physostigmine on the intestine of Daphnia magna ..... 1941 **81** 105
**Obreshkove, Vasil.** *See* Saul Ellenbogen ..... 1949 **97** 138
**O'Brien, John A.** Plastid development in the scutellum of Triticum sativum and Secale cereale (abstract) ..... 1947 **93** 211
**Olson, J. Bennet.** *See* Martin W. Johnson ..... 1948 **95** 320
**Olson, Magnus.** Histology of the radula protractor muscles of Busycon canaliculatum Linn. ..... 1942 **82** 190
**Olson, R. A.** *See* F. S. Brackett (abstract) ..... 1949 **97** 271
**O'Malley, Benedict.** *See* Gerald R. Seaman (abstract) ..... 1949 **97** 261
**O'Melveny, K.** *See* Albert Tyler ..... 1941 **81** 364
**O'Neal, J. D.** *See* E. A. Wolf (abstract) ..... 1941 **81** 305
**Ono, Tomonao.** *See* Katsuma Dan ..... 1952 **102** 58
**Ormsbee, Richard A.** The normal growth and respiration of Tetrahymena geleii ..... 1942 **82** 423
**Ornstein, Norma.** *See* John R. Gregg ..... 1952 **102** 22

**Ornstein, N., and John R. Gregg.** Respiratory metabolism of amphibian gastrulae explants ..... 1952 103 407
**Osborn, C. M.** Factors influencing the pigmentation of regenerating scales on the ventral surface of the summer flounder (abstract) ..... 1941 81 301
Studies on the growth of integumentary pigment in the lower vertebrates:
I. The origin of artificially developed melanophores on the normally unpigmented ventral surface of the summer flounder, Paralichthys dentatus ..... 1941 81 341
II. The role of the hypophysis in melanogenesis in the common catfish, Ameiurus melas ..... 1941 81 352
**Osterhout, W. J. V.** Activation of eggs of Nereis limbata by a surface-active extract of dead sperm (abstract) ..... 1952 103 305
Activation of Nereis eggs by a detergent (abstract) ..... 1950 99 362
Behavior of jelly in eggs of Nereis limbata (abstract) ..... 1951 101 226
Detergent action of sperm extract in N. limbata (abstract) ... 1951 101 226
Effects of hypertonic solutions on Nereis eggs (abstract) ..... 1948 95 269
Experiments on chloroplasts and on photosynthesis (abstract) . 1948 95 270
Extrusion of jelly by eggs of N. limbata under electrical stimulus (abstract) ..... 1949 97 260, 345
Relative solubility of the components of the Nereis egg (abstract) ..... 1950 99 362
Reversible contraction of protoplasmic structures by changes in pH values (abstract) ..... 1952 103 306
Solubility of the vitelline membrane of Nereis eggs (abstract) . 1948 95 269
The mechanism of accumulation (abstract) ..... 1950 99 308
**Ottesen, M.** *See* Claude A. Villee (abstract) ..... 1950 99 322

## P

**Pace, D. M.** The effect of cyanide on respiration in Paramecium aurelia and P. caudatum ..... 1945 89 76
**Pace, D. M., and Betty Lu Frost.** The effects of ethyl alcohol on growth and respiration in Pelomyxa carolinensis ..... 1952 103 97
**Pace, D. M., and E. D. Lyman.** Oxygen consumption and carbon dioxide elimination in Tetrahymena geleii Ferguson ..... 1947 92 210
**Pace, D. M., and W. H. Belda.** The effect of food content and temperature on respiration in Pelomyxa carolinensis Wilson. 1944 86 146
The effects of potassium cyanide; potassium arsenite; ethyl urethane; on respiration in Pelomyxa carolinensis ..... 1944 87 138
**Page, Irvine H.** *See* R. G. Abell (abstract) ..... 1941 81 293
**Pandazi, Andrew A.** *See* V. J. Wulff ..... 1951 101 114
**Papandrea, D. N.** *See* A. A. Abramowitz ..... 1944 86 1
**Parker, George H.** Hypersensitization of catfish melanophores to adrenalin by denervation (abstract) ..... 1941 81 302
Methods of estimating the effects of melanophore changes on animal coloration ..... 1943 84 273

The organization of the melanophore system in bony fishes (abstract) ..... 1941 81 280
The responses of catfish melanophores to ergotamine..... 1941 81 163
**Parkins, William M.** *See* Richard G. Abell (abstract)..... 1944 87 162
**Parpart, Arthur K.** Absence of a fine internal network in erythrocytes of elasmobranchs (abstract)..... 1950 99 351
Lipo-protein complexes in the egg of Arbacia (abstract)..... 1941 81 296
**Parpart, A. K., E. R. Parpart and T. Dey.** The relation between hemolysis and the potassium content of red cells (abstract). 1951 101 200
**Parpart, A. K., E. S. G. Barron and T. Dey.** Are —SH groups involved in the penetration of glycerol into human red cells? (abstract)..... 1947 93 199
**Parpart, A. K., J. F. Hoffman and J. W. Green.** The case against a correlation between flicker and metabolism of red cells (abstract)..... 1951 101 212
**Parpart, A. K.** *See* James W. Green (abstract)..... 1950 99 325
**Payne, Fernandus.** The cytology of the anterior pituitary in the fowl..... 1942 82 79
**Pease, Daniel C.** Hydrostatic pressure effects upon the spindle figure and chromosome movement: II. Experiments on the meiotic divisions of Tradescantia pollen mother-cells..... 1946 91 145
**Peiss, C. N., and John Field.** Respiratory metabolism of excised tissues of warm- and cold-adapted fishes..... 1950 99 213
**Pendleton, Robert C.** *See* Frederick R. Evans..... 1952 103 190
**Pequegnat, Willis E.** Inhibition of fertilization in Arbacia by blood extracts..... 1948 95 69
**Perkins, John F., and William H. Johnson.** Cooling as a stimulus to smooth muscle (abstract)..... 1951..101 202
**Perkins, J. F.** *See* Rita Guttman (abstract)..... 1952 103 302
*See* W. H. Johnson (abstract)..... 1951 101 210
*See* W. H. Johnson (abstract)..... 1952 103 286, 293
**Perry, Albert S., Arnold M. Mattson and Annette J. Buckner.** The mechanism of synergistic action of DMC with DDT against resistant house flies..... 1953 104 426
**Perry, S. V.** Studies on the rigor resulting from the thawing of frozen skeletal muscle (abstract)..... 1949 97 270
**Persky, Harold.** Hippuric acid excretion in anxiety states (abstract)..... 1948 95 246
**Persky, H., and Marcia Gold.** The choline acetylase and cholinesterase content of some invertebrate tissues (abstract)..... 1948 95 278
**Person, Philip, W. W. Wainio and Bertram Eichel.** The separation and partial identification of the prosthetic groups of cytochrome oxidase and cytochrome *b* (abstract)..... 1952 103 287
**Pettingill, Olive.** Phosphatase activity in the chloride cells in the gill of Fundulus heteroclitus (abstract)..... 1947 93 224
**Philips, F. S.** Comparison of the respiratory rates of different regions of the chick blastoderm during early stages of development (abstract)..... 1941 81 283

**Pierce, E. Lowe.** The Chaetognatha of the west coast of Florida. 1951 100 206
**Pierce, E. Lowe.** *See* George L. Clarke..... 1943 85 201
**Pierce, Madelene E., and Joanne E. Currier.** The relation of the growth of oysters to different ecological conditions in Rand's Harbor (abstract)..... 1951 101 226
Further studies on the growth of oysters under different ecological conditions in Rand's Harbor (abstract)..... 1952 103 306
**Pierce, Madelene E.** *See* George C. Whiteley, Jr. (abstract)... 1949 97 250
**Pirovane, Louise A.** *See* Valy Menkin (abstract)..... 1949 97 244
**Pitelka, Dorothy, and Charles B. Metz.** The structure of the "neuromotor apparatus" of Paramecium as revealed by the electron microscope (abstract)..... 1952 103 282
**Pitelka, Dorothy R.** *See* Charles B. Metz..... 1953 104 408
**Pitts, Marjorie W.** *See* Marie J. Browne..... 1950 99 152
**Pitts, Robert F.** *See* Marie J. Browne..... 1950 99 152
**Plough, H. H., Madelon R. Grimm and Martin L. Vogel.** Plus and minus mutations in biochemical requirements in Salmonella tymphimurium (abstract)..... 1949 97 221
**Podolsky, Betty.** *See* John O. Hutchens (abstract)..... 1948 95 251
**Pollen, Richard.** *See* Allan Scott (abstract)..... 1951 101 229
**Pomerat, C. M., and C. M. Weiss.** The influence of texture and composition of surface on the attachment of sedentary marine organisms..... 1946 91 57
**Pomerat, C. M., and E. R. Reiner.** The influence of surface angle and of light in the attachment of barnacles and of other sedentary organisms..... 1942 82 14
**Pope, Charlotte T.** *See* Harold F. Blum (abstract)..... 1950 99 317
**Pratt, David M.** Analysis of population development in Daphnia at different temperatures..... 1943 85 116
**Price, Judith P.** *See* Harold F. Blum (abstract)..... 1949 97 232
*See* H. F. Blum (abstract)..... 1950 99 317
**Proctor, Nathaniel K.** The effects of calcium on isolated arthropod muscle fibers..... 1952 103 421
**Prosser, C. Ladd.** Accumulation and distribution of radio-active material in goldfish (abstract)..... 1947 93 225
An analysis of the action of acetylcholine on hearts, particularly in arthropods..... 1942 83 145
**Prosser, C. Ladd, and Charles L. Judson.** Pharmacology of haemal vessels of Stichopus californicus..... 1952 102 249
**Prosser, C. Ladd, and G. L. Zimmerman.** Comparative pharmacology of myogenic and neurogenic hearts (abstract)..... 1941 81 292
**Prosser, C. Ladd.** The electrocardiogram of Arenicola..... 1950 98 254
**Provasoli, Luigi, S. H. Hutner and Albert Schatz.** Streptomycin-induced chlorophyll-less races of Euglena (abstract). 1948 95 260
**Pryor, Carlon W., and Charles A. Leone.** Serological comparisons of astacuran Crustacea..... 1952 103 433
**Pyle, Robert W.** The histogenesis and cyclic phenomena of the sinus gland and X-organ in Crustacea..... 1943 85 87

## R


**Rabinovitch, M.** *See* L. J. Junqueira (abstract) ..... 1948 95 243

**Rahn, H.** The distribution and development of the melanophore hormone in the pituitary of the chick (abstract) ..... 1941 81 281

**Rakestraw, Norris W., and Theodor von Brand.** Decomposition and regeneration of nitrogenous organic matter in sea water. VI. The effect of enzyme poisons ..... 1947 92 110

**Rakestraw, N. W.** *See* T. von Brand .....1941 81 63 1942 83 273

**Ralston, H. J.** *See* B. Libet (abstract) ..... 1951 101 194

**Rao, K. P.** Rate of water propulsion in Mytilus californianus as a function of latitude ..... 1953 104 171

**Rapean, J. C.** *See* Milton A. Miller ..... 1948 94 143

**Rattenbury, Joan C.** Reproduction in Phoronopsis viridis. The annual cycle in the gonads; maturation and fertilization of the ovum ..... 1953 104 182

**Rawley, June.** *See* F. R. Hunter (abstract) ..... 1948 95 255

*See* F. R. Hunter ..... 1949 97 57

**Ray, D. T.** Dominant lethals induced by X-rays in sperm of the chalcidoid wasp, Nasonia brevicornis Ashmead (abstract) .. 1948 95 257

**Recknagel, Richard O.** *See* Karl M. Wilbur ..... 1943 85 193

**Redfield, Alfred C., and Charles M. Weiss.** The resistance of metallic silver to marine fouling ..... 1948 94 25

**Reichart, R.** *See* L. H. Kleinholz ..... 1950 99 454

**Reid, W. Malcolm.** Glycogen depletion during starvation in the nemertean Micruria leidyi Verrill and its ecological significance ..... 1950 99 469

**Reiner, E. R.** *See* C. M. Pomerat ..... 1942 82 14

**Reinhard, Edward G.** An analysis of the effects of a sacculinid parasite on the external morphology of Callinectes sapidus Rathbun ..... 1950 98 277

Experiments on the determination and differentiation of sex in the bopyrid Stegophryxus hyptius (Thompson) ..... 1949 96 17

Studies on the life history and host-parasite relationship of Peltogaster paguri ..... 1942 83 401

**Resnik, Robert A., and Irving M. Klotz.** Sedimentation constant of hemerythrin (abstract) ..... 1951 101 227

**Rhode, C. Martin.** *See* W. R. Amberson (abstract) ..... 1944 87 161

**Rice, Mary E.** *See* George T. Scott (abstract) ..... 1949 97 260

**Rice, Nolan E.** Pelomyxa carolinensis (Wilson), or Chaos chaos (Linnaeus)? ..... 1945 88 139

The culture of Volvox aureus Ehrenberg ..... 1947 92 200

**Rich, Alexander.** Double refraction of flow studies on desoxypentose-nucleic acid (abstract) ..... 1950 99 336

**Richards, A. Glenn.** Studies on arthropod cuticle. VIII. The antennal cuticle of honeybees, with particular reference to the sense plates ..... 1952 103 201

**Richards, A. Glenn, and Frances H. Korda.** Studies on arthropod cuticle. II. Electron microscope studies of extracted cuticle ..... 1948 94 212
**Richards, A. Glenn, and Laurence K. Cutkomp.** Correlation between the possession of a chitinous cuticle and sensitivity to DDT ..... 1946 90 97
**Rieser, Peter.** Resistance of cell membranes to internal pressures (read by title only) (abstract) ..... 1947 93 227
Protoplasmic viscosity of muscle and nerve (abstract) ..... 1949 97 245
**Rigdon, R. H.** *See* H. H. Rostorfer ..... 1947 92 23
**Ris, Hans.** A quantitative study of anaphase movement in the aphid, Tamalia ..... 1943 85 164
The anaphase movement of chromosomes in the spermatocytes of the grasshopper ..... 1949 96 90
The structure of meiotic chromosomes in the grasshopper and its bearing on the nature of "chromomeres" and "lamp brush chromosomes" ..... 1945 89 242
**Robbie, W. A.** A comparison of the energy requirements of the sand dollar and sea urchin eggs (abstract) ..... 1947 93 200
**Robinson, Edwin J., and Roberts Rugh.** The reproductive processes of the fish, Oryzias latipes ..... 1943 84 115
**Robinson, J. Courtland.** *See* Harold F. Blum (abstract) ..... 1949 97 232
*See* H. F. Blum (abstract) ..... 1950 99 342
**Roeder, Kenneth D.** Movements of the thorax and potential changes in the thoracic muscles of insects during flight ..... 1951 100 95
**Rogers, Edward F., and Ivor Cornman.** The potency of rotenone and related compounds in inhibiting division of sea urchin eggs (abstract) ..... 1951 101 227
**Rogers, E. F.** *See* Ivor Cornman (abstract) ..... 1951 101 208
*See* Ivor Cornman (abstract) ..... 1952 103 298
**Rogers-Talbert, R.** The fungus Lagenidium callinectes (Couch 1942), on eggs of the blue crab, in Chesapeake Bay ..... 1948 95 214
**Rogick, Mary Dora.** Studies on freshwater Bryozoa. XVI. Fredericella australensis, var. brownii, var.nov. ..... 1945 89 215
Studies on marine Bryozoa. I. Aeverrillia setigera Hincks 1887 ..... 1945 89 201
Studies on marine Bryozoa. II. Barentsia laxa Kirkpatrick 1890 ..... 1948 94 128
**Rogick, Mary Dora, and Hannah Croasdale.** Studies on marine Bryozoa. III. Wood Hole region Bryozoa asosciated with algae ..... 1949 96 32
Studies on marine Bryozoa. IV. Nolella blakei, sp.nov. ..... 1949 97 158
**Rolander, Brita.** *See* Claude A. Villee (abstract) ..... 1950 99 365, 366
**Rollason, Grace Saunders.** X-radiation of eggs of Rana pipiens .. 1949 97 169
**Romanoff, Alexis L., and Frederick Hayward.** Changes in volume and physical properties of allantoic and amniotic fluids under normal and extreme temperatures ..... 1943 84 141
Hydrogen ion concentration of albumen and yolk in the developing avian egg ..... 1944 87 223

**Ronkin, R. R.** Anomalous penetration of phosphate into gills of Mytilus (abstract) ..... 1950 **99** 319
Cytological studies on mucus formation and secretion in Busycon ..... 1952 **102** 252
Fibrous ultra-structure in the hypo-branchial mucus of Busycon (abstract) ..... 1952 **103** 306
**Ronkin, R. R., and E. Ronkin.** Cytochemical studies on mucous epithelial cells (abstract) ..... 1951 **101** 228
**Ronkin, R. R.** *See* Metry Bacila (abstract) ..... 1952 **103** 296
**Roofe, Paul G.** Notes on the circulation in the yolk sac of the toadfish, Opsanus tau (abstract) ..... 1952 **103** 307
**Root, R. W., and Laurence Irving.** The effect of carbon dioxide and lactic acid on the oxygen-combining power of whole and of hemolyzed blood of the marine fish, Tautoga onitis Linn.. 1943 **84** 207
The equilibrium between hemoglobin and oxygen in whole and hemolyzed blood of the tautog, with a theory of the Haldane effect ..... 1941 **81** 307
**Rosenthal, Harold.** Observations on reproduction of the poeciliid Lebistes reticulatus Peters ..... 1952 **102** 30
**Rosenthal, T. B.** *See* A. I. Lansing (abstract) ..... 1949 **97** 263
*See* A. I. Lansing (abstract) ..... 1952 **103** 293
*See* J. Hillier (abstract) ..... 1952 **103** 294
**Rostorfer, Howard H.** The gas content in the swim bladder of the rock bass, Amblopites rupestris, in relation to hydrostatic pressure ..... 1942 **82** 138
**Rostorfer, H. H., and H. H. Rigdon.** The relation of blood oxygen transport to resistance to anoxia in chicks and ducklings. 1947 **92** 23
**Roth, Jay S.** A comparative study of the ribonucleases of liver and kidney (abstract) ..... 1952 **103** 288
The action of crystalline ribonuclease on phosphate-labelled nucleic acid: a new assay method for ribonuclease (abstract).. 1951 **101** 212
**Roth, J. S., Alfred M. Elliott and Robert L. Hunter.** Some observations on phosphate uptake by Tetrahymena geleii (abstract) ..... 1950 **99** 335
**Roth, Jay S.** *See* Herbert J. Eichel (abstract) ..... 1952 **103** 300
*See* H. J. Eichel ..... 1953 **104** 351
*See* James W. Green (abstract) ..... 1950 **99** 358
**Rothenberg, M. A.** The ion permeability of the giant axon of the squid (abstract) ..... 1948 **95** 242
**Rudenberg, F. Hermann.** Exchange of radioactive calcium by unfertilized and fertilized Arbacia eggs, with or without jelly coats (abstract) ..... 1950 **99** 339
**Rudzinska, M. A.** A new peritrich from Woods Hole (abstract) 1947 **93** 200
**Rudzinska, Maria A., and Robert Chambers.** The activity of the contractile vacuole in a suctorian, Tokophrya infusionum 1951 **100** 49
**Rugh, Roberts.** Effect of X-ray radiations on squid larval tropisms ..... 1950 **98** 247

The effect of the adult anterior pituitary hormone on the tadpoles and the immature male frogs of the bull frog, Rana catesbiana ..... 1946 90 291
The X-irradiation of marine gametes. A study of the effects of irradiation at different levels on the germ cells of the clam, Spisula (formerly Mactra) ..... 1953 104 197
**Rugh, Roberts.** *See* Edwin J. Robinson ..... 1943 84 115
**Runnström, John.** *See* A. Monroy (abstract) ..... 1950 99 339
*See* Erik Vasseur (abstract) ..... 1950 99 324
**Rush, G.** *See* E. Novitski ..... 1949 97 150
**Rusk, Malcolm.** *See* Sears Crowell (abstract) ..... 1950 99 357
**Ryan, F. J.** The time-temperature relation of different stages of development ..... 1941 81 431

## S

**Sabal, James.** *See* Paul A. Wright (abstract) ..... 1952 103 312
**Sacktor, Bertram.** Some aspects of respiratory metabolism during metamorphosis of normal and DDT-resistant house flies, Musca domestica L. ..... 1951 100 229
**Saigh, Lorraine M.** *See* Frank A. Brown, Jr. ..... 1946 91 170
**Salvatore, Carlos Alberto.** Action of estrone and progesterone on nuclear volume. (Studied by applying the karyometric-statistical method) ..... 1950 99 112
**Sanborn, Richard O.** *See* Carroll M. Williams (abstract) ..... 1948 95 282
**Sandeen, Muriel, and Frank A. Brown, Jr.** The relationship between the state of distal retinal pigment and illumination in Palaemonetes (abstract) ..... 1951 101 228
**Sandeen, Muriel I., Milton Fingerman and Frank A. Brown, Jr.** Responses of the distal retinal pigment of Crago septemspinosus to changes in illumination (abstract) ..... 1952 103 307
**Sandeen, Muriel I.** *See* Frank A. Brown, Jr. (abstract) ..... 1952 103 297
**Sandoz, Mildred, and Sewell H. Hopkins.** Early life history of the oyster crab, Pinnotheres ostreum (Say) ..... 1947 93 250
**Sandow, Alexander.** *See* Arthur J. Kahn (abstract) ..... 1950 99 316
**Sarbahi, Daya Shankar.** Studies of the digestive tracts and the digestive enzymes of the goldfish, Carassius auratus L., and the large mouthed black bass, Micropterus salmoides Lacépède ..... 1951 100 244
**Sawyer, Wilbur H.** *See* Carroll M. Williams ..... 1943 84 263
**Sayles, Leonard P.** Implants, consisting of young buds, formed in anterior regeneration in Clymenella, plus the nerve cord of the adjacent old part (abstract) ..... 1941 81 302
Bud induced in Clymenella torquata by implants of nerve cord and neighboring tissues derived from the mid body region of worms of the same species ..... 1942 82 154
**Schaeffer, Asa A.** Chaos nobilis Penard in permanent culture (abstract) ..... 1941 81 303
**Schaeffel, M.** *See* E. Alfred Wolf (abstract) ..... 1941 81 305

**Scharrer, Berta.** Neurosecretion. IV. Localization of neurosecretory cells in the central nervous system of Limulus..... 1941 **81** 96
Neurosecretion. XI. The effects of nerve section on the intercerebralis-cardiacum-allatum system of the insect Leucophaea maderae..... 1952 **102** 261
Further studies of the intercerebralis-cardiacum-allatum system of insects (abstract)..... 1952 **103** 284
The prothoracic glands of Leucophaea maderae (Orthoptera). 1948 **95** 186
**Scharrer, Berta, and Ernst Scharrer.** Neurosecretion. VI. A comparison between the intercerebralis-cardiacum-allatum system of the insects and the hypothalamo-hypophyseal system of the vertebrates..... 1944 **87** 242
**Scharrer, Ernst.** Neurosecretion. X. A relationship between the paraphysis and the paraventricular nucleus in the garter snake, Thamnophis sp..... 1951 **101** 106
The capillary bed of the central nervous system of certain invertebrates..... 1944 **87** 52
The neuro-hypophysis of elasmobranch fishes (abstract)..... 1952 **103** 284
**Schatz, Albert.** *See* Luigi Provasoli (abstract)..... 1948 **95** 260
**Schechter, Victor.** Ageing phenomena, and factors influencing the longevity of Mactra eggs (program title only)..... 1941 **81** 283
Further studies on the egg cells of Mactra (abstract)..... 1941 **81** 303
Survival of Spisula (Mactra) ova (abstract)..... 1952 **103** 309
**Scheer, Bradley T.** The development of marine fouling communities..... 1945 **89** 103
**Scheer, B. T.** *See* Albert Tyler..... 1945 **89** 193
**Schlesinger, A. H.** *See* I. M. Klotz (abstract)..... 1947 **93** 218
*See* I. M. Klotz..... 1948 **94** 40
**Schmitt, Otto H.** Use of extra-polar stimulus escape to measure nerve membrane characteristics (abstract)..... 1949 **97** 246
Some low frequency characteristics of axoplasm and the nerve membrane (abstract)..... 1950 **99** 344
**Schneider, Lillian K.** Population dynamics in Escherichia coli (abstract)..... 1950 **99** 331
**Schneider, Lillian K., and Helen Cross.** A selective mechanism in Escherichia coli (abstract)..... 1951 **101** 203
**Schneirla, T. C.** The army-ant behavior pattern: Nomad-statary relations in the swarmers and the problem of migration..... 1945 **88** 166
**Scholander, Per F., and L. van Dam.** Composition of the swimbladder gas in deep sea fishes..... 1953 **104** 75
**Scholander, P. F., C. Lloyd Claff, C. T. Teng and V. Walters.** Nitrogen tension in the swim-bladder of marine fishes in relation to depth..... 1951 **101** 178
**Scholander, P. F., C. Lloyd Claff and S. L. Sveinsson.** Respiratory studies of single cells:
I. Methods..... 1952 **102** 157
II. Observations on the oxygen consumption in single protozoans..... 1952 **102** 178

**Scholander, P. F., C. Lloyd Claff, S. L. Sveinsson and Susan I. Scholander.** Respiratory studies of single cells. III. Oxygen consumption during cell division ..... 1952 102 185
**Scholander, P. F., Raymond Hock, Vladimir Walters and Laurence Irving.** Adaptation to cold, in arctic and tropical mammals and birds, in relation to body temperature, insulation and basal metabolic rate ..... 1950 99 259
**Scholander, P. F., Raymond Hock, V. Walters, Fred Johnson and L. Irving.** Heat regulation in some arctic and tropical mammals and birds ..... 1950 99 237
**Scholander, P. F., V. Walters, R. Hock and L. Irving.** Body insulation of some arctic and tropical mammals and birds ... 1950 99 225
**Scholander, Susan Irving.** *See* P. F. Scholander ..... 1952 102 185
**Schrader, Franz.** Chromatin bridges and irregularity of mitotic coordination in the pentatomid Peromatus notatus Am. and Serv. ..... 1941 81 149
Regular occurrence of heteroploidy in a group of Pentatomidae (Hemiptera) ..... 1945 88 63
Autosomal elimination and preferential segregation in the harlequin lobe of certain Discocephalini (Hemiptera) ..... 1946 90 265
The elimination of chromosomes in the meiotic divisions of Brachystethus rubromaculatus Dallas ..... 1946 90 19
**Schrader, F.** *See* Cecilie Leuchtenberger ..... 1951 101 95
**Schrader, Sally Hughes-.** A primitive coccid chromosome cycle in Puto sp. ..... 1944 87 167
**Schreiber, Giorgio.** Statistical and physiological studies on interphase growth of nucleus ..... 1949 97 187
**Schulman, Martin P., and George Wald.** The valence of copper in hemocyanin (abstract) ..... 1951 101 239
**Sclufer, Evelyn.** Respiration of Spisula eggs (abstract) ..... 1951 101 228
**Scott, Allan.** Cytological analysis of the effects of cyanide and 4,6-dinitro-ortho-cresol on the mitotic phases in Arbacia punctulata (abstract) ..... 1950 99 362
Reversal of sex production in Micromalthus ..... 1941 81 420
The effect of low temperature and of hypotonicity on the morphology of the cleavage furrow in Arbacia eggs ..... 1946 91 272
**Scott, A., and George LeBaron.** Factors involved in the breakdown of the germinal vesicle in the eggs of Chaetopterus pergamentaceus (abstract) ..... 1950 99 363
**Scott, A., and Howard Fox.** Cleavage synchrony in individual embryos and in populations of embryos of Arbacia punctulata (abstract) ..... 1952 103 288
**Scott, A., and Richard Pollen.** The effect of calcium and temperature on furrowing in Arbacia (abstract) ..... 1951 101 229
**Scott, Dwight B. McNair.** The oxidative pathway of carbohydrate metabolism in Escherichia coli (abstract) ..... 1952 103 287
**Scott, George T. and Mary E. Rice.** Influence of glycolysis on potassium and sodium content of Saccharomyces cerevisiae and the egg of Arbacia punctulata (abstract) ..... 1949 97 260

**Scott, G. T., and Hugh R. Hayward.** Influence of the glycolytic inhibitor iodoacetic acid on ageing and on the potassium and sodium content of the egg cells of Mactra solidissima (abstract) ..... 1950 **99** 363
**Scott, G. T., and Marc Jacobson.** The influence of glycolytic factors on the potassium and sodium content of the yeast cell (abstract) ..... 1950 **99** 319
**Scott, G. T., Hugh R. Hayward and William T. Andrus.** The prevention of the iodoacetate effect on the potassium and sodium content of Ulva lactuca by photosynthesis (abstract). 1952 **103** 308
The rate and extent of exchange of $K^{42}$ with cellular $K^{39}$ in Ulva lactuca (abstract) ..... 1952 **103** 308
**Scott, Sr. Florence Marie.** The developmental history of Amaroecium constellatum:
I. Early embryonic development ..... 1945 **88** 126
II. Organogenesis of the larval action system ..... 1946 **91** 66
III. Metamorphosis ..... 1952 **103** 226
**Scrimshaw, Nevin S.** Embryonic growth in the viviparous poeciliid Heterandria formosa ..... 1944 **87** 37
Embryonic development in poeciliid fishes ..... 1945 **88** 233
**Scudamore, Harold H.** Factors influencing molting and sexual cycles in the crayfish ..... 1948 **95** 229
**Scudder, Charles.** *See* Peter R. Morrison ..... 1951 **101** 171
**Sealander, John A., Jr.** Body temperatures of white-footed mice in relation to environmental temperature and to heat and cold stress ..... 1953 **104** 87
**Seaman, Gerald R.** Dependence of ciliary action upon acetylcholine esterase activity (abstract) ..... 1950 **99** 347
The presence of the tricarboxylic acid cycle in the ciliate, Colpidium campylum ..... 1949 **96** 257
**Seaman, G. R., and B. O'Malley.** Adaptative utilization of sucrose by the ciliate, Colpidium campylum (abstract) ..... 1949 **97** 261
**Seaman, G. R., and Robert K. Houlihan.** Effects of various acids on enzyme systems in Colpidium campylum (abstract). 1949 **97** 246
**Seaman, G. R.** *See* Charles G. Wilber (abstract) ..... 1947 **93** 214, 228
*See* Charles G. Wilber (abstract) ..... 1948 **94** 29
**Sedar, Albert W., and Donald F. Wilson.** Electron microscope studies on the normal and colchicinized mitotic figures of the onion root tip (Allium cepa) ..... 1951 **100** 107
**Seegmiller, J. E.** *See* E. S. G. Barron ..... 1948 **94** 267
**Shallek, William.** The vertical migration of the copepod Acartia tonsa under controlled illumination ..... 1942 **82** 112
The reaction of certain Crustacea to direct and to diffused light ..... 1943 **84** 98
The glycogen content of some invertebrate nerves (abstract) .. 1949 **97** 252
**Shanes, Abraham M.** Current, voltage, and resistance characteristics of injured nerves (abstract) ..... 1944 **87** 158
Electrical changes in crab nerve in relation to potassium movement (abstract) ..... 1949 **97** 247

The effect of "stabilizing" and "unstabilizing" agents in relation to the metabolic mechanism supporting the resting potential of nerve (abstract) ..... 1948 95 245
Potassium movement in relation to drug and ion action in nerve (abstract) ..... 1950 99 309
**Shanes, A. M., and T. J. de Kornfeld.** Some spectro-photometric observations on invertebrate nerves and their extracts (abstract) ..... 1950 99 327
**Shanklin, D. R.** The technique of photomicroscopy with the Polaroid Land camera (abstract) ..... 1952 103 308
**Shanklin, D. R., and Philip B. Armstrong.** The osmotic behavior and anatomy of the Fundulus chorion (abstract) ..... 1952 103 295
**Shanklin, D. R.** *See* P. B. Armstrong (abstract) ..... 1952 103 291
**Shapiro, Herbert.** Metabolism and fertilization in the starfish egg (abstract) ..... 1941 81 278
Retardation of cell division by vitamin C in physiological concentrations ..... 1948 94 79
**Shaver, J. R.** An experimental study of the "second factor" in artificial parthenogenesis in the frog egg (abstract) ..... 1948 94 78
The occurrence of twinning in Fundulus heteroclitus after centrifugation (abstract) ..... 1951 101 201
**Shaver, J. R., and Susumo Ito.** The effect of centrifugation and low temperature on the development of Fundulus heteroclitus (abstract) ..... 1952 103 309
**Shaver, J. R., S. Subtelny and A. Wania.** Studies on initiation of cleavage in frog eggs (abstract) ..... 1952 103 282
**Shaw, Samuel N., and Julian M. Tobias.** Preliminary measurements of birefringence changes due to electrical polarization of isolated squid giant axons (abstract) ..... 1951 101 229
**Shenk, W. D.** Chloride content of frog muscle (abstract) ..... 1949 97 248
**Sheppard, C. W., and W. R. Martin.** Studies of the kinetics of potassium exchange between cells and plasma of canine blood, *in vitro*, using $K^{42}$ (abstract) ..... 1948 95 287
**Sheppard, C. W.** The disturbance by X-rays of selective potassium accumulation in human erythrocytes (abstract) ..... 1950 99 310
**Sherman, F. G.** The effect of temperature change on the oxygen consumption of yeast (abstract) ..... 1947 93 227
**Short, Robert B.** Observations on the giant amoeba, A. carolinensis Wilson, 1900 ..... 1946 90 8
**Shutts, James Hervey.** An electron microscope study of the egg membranes of Melanoplus differentialis Thomas ..... 1949 97 100
**Silberger, Julius, and Francis Haxo.** Aqueous chlorophyll preparations from blue-green algae (abstract) ..... 1950 99 364
**Skoog, Folke.** Chemical induction of bud formation in plant tissues (abstract) ..... 1949 97 268
**Slane, G. M.** *See* Charles G. Wilber (abstract) ..... 1951 101 234
**Slater, Anne M.** *See* David R. Goddard (abstract) ..... 1947 93 227
**Slater, John V.** Effect of pH on "resting" Tetrahymena (abstract) ..... 1952 103 310

**Slater, J. V.** *See* A. M. Elliott (abstract) ..... 1952 103 301
**Slaughter, J. C.** *See* Titus C. Evans (abstract) ..... 1941 81 282, 291
**Slifkin, Miriam, and John T. Bonner.** The effect of salts and organic solutes on the migration time of the slime mold Dictyostelium discoideum ..... 1952 102 273
**Slobodiansky, Evelyn.** *See* Milton Levy (abstract) ..... 1948 95 240
**Slocombe, Alan G.** *See* John H. Welsh ..... 1952 102 48
**Smith, Dietrich C., and Frances C. Brown.** The effect of parrot fish thyroid extract on the respiratory metabolism of the white rat ..... 1952 102 278
**Smith, F. G. Walton.** Effect of water currents upon the attachment and growth of barnacles ..... 1946 90 51
Surface illumination and barnacle attachment ..... 1948 94 33
**Smith, Lynwood B.** *See* Marshall E. Smith ..... 1949 96 233
**Smith, Marshall E., and L. B. Smith.** Piperazine dihydrochloride and glycylglycine as non-toxic buffers in distilled water and in sea water ..... 1949 96 233
**Smith, Ralph I.** The action of electrical stimulation and of certain drugs on cardiac nerves of the crab Cancer irroratus. 1947 93 72
The role of the sinus gland in retinal pigment migration in grapsoid crabs ..... 1948 95 169
**Smith, R. Dale.** *See* W. R. Amberson (abstract) ..... 1949 97 231
*See* W. R. Amberson (abstract) ..... 1950 99 314
**Smith, Stuart W.** Separation and characterization of neurosecretory material from Fundulus heteroclitus (abstract) ... 1950 99 371
**Smythe, M. P.** *See* A. K. Keltch (abstract) ..... 1951 101 220
**Snedecor, James.** *See* Alfred M. Lucas (abstract) ..... 1941 81 290
**Solomon, A. K.** *See* R. K. Crane (abstract) ..... 1948 95 248
**Solomon, Sidney, and Julian M. Tobias.** Changes in light emerging from the squid giant axon during activity: use of an intra-axonal light source (abstract) ..... 1951 101 213
Influence of direct current on the long axis distribution of potassium, calcium and sodium in dog nerve (abstract) ..... 1951 101 198
Preliminary observations on squid axon structure. Light scattering properties using an intracellular light source and mechanical prod (abstract) ..... 1950 99 345
**Sonneborn, T. M., and Ruth V. Dippell.** Sexual isolation, mating types and sexual responses to diverse conditions in variety #4 Paramecium aurelia ..... 1943 85 36
**Sonnenblick, B. P.** Reduction of neo-tetrazolium chloride by X-radiated root-tip cells of Allium (abstract) ..... 1951 101 230
**Sotavalta, Olavi.** Recordings of high wing stroke and thoracic vibration frequency in some midges ..... 1953 104 439
**Speidel, Carl Caskey.** Reactions of cells in frog tadpoles to implants of tantalum (abstract) ..... 1949 97 223
Balantidial infection in tadpoles as recorded by cine-photomicrography (abstract) ..... 1952 103 285

**Spiegelman, Sol and Florence Moog.** On the interpretation of rates of regeneration in Tubularia and the significance of the independence of mass and time ..... 1944 87 227
A comparison of the effects of cyanide and of azide on the development of frogs' eggs ..... 1945 89 122
**Spiegelman, S., and H. Burr Steinbach.** Substrate-enzyme orientation during embryonic development ..... 1945 88 254
**Spikes, John D.** Prezone phenomenon in sperm agglutination ... 1949 97 95
**Spoor, W. A.** A quantitative study of the relationship between the activity and oxygen consumption of the goldfish and its application to the measurement of respiratory metabolism in fishes ..... 1946 91 312
**Sprague, Lucian.** *See* John E. Cushing ..... 1952 103 328
**Spratt, Nelson T., Jr.** Nutritional requirements of the early chick embryo. III. The metabolic basis of morphogenesis and differentiation as revealed by the use of inhibitors ..... 1950 99 120
**Stacy, Emily M.** *See* Victor A. Greulach ..... 1951 101 285
**Stadler, David R.** Chemotropism in Rhizopus nigricans:
I. The staling reaction (abstract) ..... 1951 101 199
II. The action of plant juices ..... 1953 104 100
**Stauber, Leslie A.** Pinnotheres ostreum, parasitic on the American oyster Ostrea (Gryphaea) virginica ..... 1945 88 269
The fate of india ink injected intracardially into the oyster, O. virginica Gmelin ..... 1950 98 227
**Steinbach, H. Burr.** Temperature coefficients of apyrase systems from muscles of different animals (abstract) ..... 1948 95 287
**Steinbach, H. B.** *See* S. Spiegelman ..... 1945 88 254
**Steinberg, D.** *See* Claude A. Villee (abstract) ..... 1950 99 322
**Stekler, Burton L.** The use of diethyl-stilbestrol in the production of eye mutations in Drosophila (abstract) ..... 1948 95 258
**Stekler, B. L.** *See* Rudolph T. Kempton (abstract) ..... 1947 93 197
**Stephens, Grover C.** The control of cement gland development in the crayfish Cambarus ..... 1952 103 242
**Stephens, G. C.** *See* F. A. Brown, Jr. ..... 1951 101 71
**Steward, F. C., and F. K. Millar.** The role of growth and metabolism in iron accumulation in plant cells (abstract) ..... 1950 99 309
**Stewart, Dorothy R., and M. H. Jacobs.** The role of carbonic anhydrase in the catalysis of ionic exchanges by bicarbonates (abstract) ..... 1941 81 294
**Stewart, D. R.** *See* M. H. Jacobs (abstract) ..... 1941 81 294
**Stewart, Peter.** An experimental method for rapid determination of extra-polar potential distribution in nerve (abstract) ..... 1949 97 249
Progressive changes in the nerve membrane admittance after dissection (abstract) ..... 1950 99 344
**St. George, Robert C. C.** Photosensitive pigment of the squid retina (abstract) ..... 1949 97 248
**Stone, Frederick L.** The problem of differences of offspring in reciprocal crosses of Drosophila ..... 1947 93 102

**Stoudt, Carolyn M.** *See* M. H. Jacobs (abstract) ..... 1949 97 228
*See* W. R. Amberson (abstract) ..... 1950 99 314
**Strain, Harold H.** Hopkinsiaxanthin, a xanthophyll of the sea slug 1949 97 206
**Strain, H. H., Winston M. Manning and Garrett Hardin.** Xanthophylls and carotenes of diatoms, brown algae, dinoflagellates and sea anemones ..... 1944 86 169
**Straus, William L.** A study of the development of the fin and trunk musculature in elasmobranch fishes (abstract) ..... 1950 99 364
**Strittmatter, C. F.**—*See* A. K. Keltch (abstract) ..... 1949 97 242
*See* G. H. A. Clowes (abstract) ..... 1949 97 234
**Strittmatter, C. F., E. G. Ball and Octavia Cooper.** Glycolytic activity in the swim-bladder gland (abstract) ..... 1952 103 317
**Strittmatter, Philipp.** *See* A. K. Keltch (abstract) ..... 1950 99 334
*See* G. H. A. Clowes (abstract) ..... 1950 99 335
**Strittmatter, Philipp, A. K. Keltch, C. P. Walters and G. H. A. Clowes.** Oxidative phosphorylation by a cell-free, particulate enzyme system derived from fertilized Arbacia eggs (abstract) ..... 1950 99 333
**Strout, Phyllis.** *See* Francis Haxo (abstract) ..... 1950 99 360
**Stunkard, Horace W.** Larval trematodes from the planarian Dugesia tigrinum (abstract) ..... 1950 99 347
Microphallid meta-cercariae encysted in Limulus polyphemus (abstract) ..... 1950 99 347
Observations on the morphology and life history of Microphallus limuli sp.nov. (Trematoda: Microphallidae) ..... 1951 101 307
Further observations on Cercaria parvicaudata, Stunkard and Shaw, 1931 ..... 1950 99 136
Specificity and host relations in the trematode genus Zoögonus. 1941 81 205
The morphology and life history of the digenetic trematode Zoögonoides laevis Linton, 1940 ..... 1943 85 227
**Stunkard, H. W., and C. H. Willey.** Pathology and immunity to infection with heterophyid trematodes (abstract) ..... 1941 81 279
**Stunkard, H. W., and John O. Corliss.** New species of Syndesmis and a revision of the family Umagillidae Wahl, 1910 (Turbellaria: Rhabdocoela) ..... 1951 101 319
**Subtelny, S.** *See* J. R. Shaver (abstract) ..... 1952 103 282
**Sugiyama, Masao.** Re-fertilization of the fertilized eggs of the sea urchin ..... 1951 101 335
Physiological analysis of the cortical response of the sea urchin egg to stimulating reagents:
I. Response to sodium choleinate and wasp venom ..... 1953 104 210
II. The propagating or non-propagating nature of the cortical changes induced by various reagents ..... 1953 104 216
**Sullivan, Robert L.** *See* Daniel S. Grosch ..... 1952 102 128
**Sumner, F. B.** A further report upon the effects of visual environment on the melanin content of fishes ..... 1943 84 195
**Sumner, F. B., and Peter Duodoroff.** An improved method of assaying melanin in fishes ..... 1943 84 187

**Sumner, F. B., and Urless N. Lanham.** Studies of the respiratory metabolism of warm and cool spring fishes..... 1942 82 313
**Sussman, Alfred S.** Tyrosinase and the respiration of pupae of Platysamia cecropia L..... 1952 102 39
**Sussman, M.** An analysis of the aggregation stage in the development of the slime molds, Dictyosteliaceae. II. Aggregative center formation by mixtures of D. discoideum wild type and aggregateless variants..... 1952 103 446
**Sussman, M., and Elisabeth Nöel.** An analysis of the aggregation stage in the development of the slime molds Dictyosteliaceae. I. The populational distribution of the capacity to initiate aggregation..... 1952 103 259
**Sveinsson, S. L.** *See* P. F. Scholander..... 1952 102 157, 178, 185
**Sze, L. C.** Respiratory gradients in Tubularia..... 1953 104 109
**Szent-Gyorgyi, Albert.** Free energy relations and contraction of actomyosin..... 1949 96 140
Thermo-dynamic theory of the contraction of actomyosin (abstract)..... 1948 95 285
**Szent-Gyorgyi, A.** *See* M. Borbiro..... 1949 96 162
**Szent-Gyorgyi, Andrew G.** Investigation on muscle fibers (abstract)..... 1949 97 226

## T

**Tahmisian, Theodore Newton.** *See* J. H. Bodine..... 1943 85 157
*See* C. Lloyd Claff (abstract)..... 1948 95 253
**Tamm, Igor.** Agglutination of fish and turtle erythrocytes by viruses..... 1952 102 149
**Tarr, Elizabeth.** *See* George Wald (abstract)..... 1948 95 249
**Tatum, E. L.** *See* W. J. van Wagtendonk..... 1942 83 137
**Taub, Rae.** *See* John H. Welsh..... 1948 95 346
**Taylor, I. M., and J. M. Weller.** Studies on the permeability of human erythrocytes to potassium (abstract)..... 1950 99 311
**Taylor, Kenneth M.** *See* E. D. Goldberg..... 1951 101 84
**Taylor, M. F. J.** *See* J. F. Manery (abstract)..... 1950 99 312
**Taylor, William Randolph.** Reproduction of Dudresnaya crassa Howe..... 1950 99 272
**Teng, C. T.** *See* P. F. Scholander..... 1951 101 178
**Te Winkel, L. E.** Intermyotome connections in early embryos of Mustelus canis (abstract)..... 1948 95 270
Notes on ovulation, ova, and early development in the smooth dogfish, Mustelus canis..... 1950 99 474
Structures concerned with yolk absorption in Squalus acanthias (abstract)..... 1941 81 292
**Thienes, C. H.** *See* C. H. Ellis..... 1942 83 334
**Thimann, Kenneth V.** Plant hormones, growth and respiration. 1949 96 296
**Thivy, Francesca.** A new species of Ectochaete (Huber) Wille from Woods Hole, Mass..... 1942 83 97
New records of some marine Chaetophoraceae and Chaetosphaeridiaceae for North America..... 1943 85 244

**Thomas, Lyell J., Jr.** *See* Clifford V. Harding (abstract) ..... 1949 97 241
**Thomas, L. J., Jr.** A blood anti-coagulant from surf clams (abstract) ..... 1951 101 230
**Tietze, F.** *See* Irving M. Klotz (abstract) ..... 1947 93 218
*See* I. M. Klotz ..... 1948 94 40
*See* I. M. Klotz (abstract) ..... 1948 95 275
**Tobias, Julian M.** Electrically induced optical and dimensional changes in single axons, including that of the squid. Preliminary observations on ion effects (abstract) ..... 1950 99 345
**Tobias, J. M., and J. J. Kollros.** Loci of action of DDT in the cockroach, Periplaneta americana ..... 1946 91 247
**Tobias, J. M.** *See* Samuel N. Shaw (abstract) ..... 1951 101 229
*See* Shirley H. Bryant (abstract) ..... 1951 101 205
*See* Sidney Solomon (abstract) ..... 1950 99 345
*See* Sidney Solomon (abstract) ..... 1951 101 198, 205, 213, 229
**Topping, Francis, and John L. Fuller.** The accommodation of some marine invertebrates to reduced osmotic pressures .... 1942 82 372
**Trager, William.** Studies on conditions affecting the survival *in vitro* of a malarial parasite, Plasmodium lophurae (abstract) ..... 1941 81 284
The relation between the excystation of an apostome ciliate, Gymnodinoides sp., and the molting of its crustacean host, Uca pugnax (abstract) ..... 1952 103 295
**Trinkaus, J. P.** Properties of the surface coat in embryos of Fundulus heteroclitus (abstract) ..... 1948 95 271
Significance of the periblast in epiboly of the Fundulus egg (abstract) ..... 1949 97 249
Significance of the periblast in teleost gastrulation (abstract). 1951 101 201
**Trinkaus, J. P., and Rosemary Gilmartin.** Behavior of the surface gel layer of the Fundulus egg during epiboly (abstract) 1949 97 250
**Tsui, Cheng.** *See* Folke Skoog (abstract) ..... 1949 97 268
**Turner, C. L.** Sexual dimorphism in the pectoral fin of Gambusia and the induction of the male character in the female by androgenetic hormones ..... 1942 83 389
The regulation of spontaneous structural anomalies in Pelmatohydra oligactis ..... 1952 103 104
The reproductive potential of a single clone of Pelmatohydra oligactis ..... 1950 99 285
**Twomey, Mary E. F.** *See* Charles G. Wilber (abstract) ..... 1947 93 211
**Tyler, Albert.** Extension of the functional life span of spermatozoa by amino acids and peptides (abstract) ..... 1950 99 324
Fertilizin of Nereis limbata (abstract) ..... 1948 95 271
Natural hetero-agglutinins in the body fluids and seminal fluids of various invertebrates ..... 1946 90 213
Prolongation of life span of sea urchin spermatozoa and improvement of the fertilization reaction, by treatment of spermatozoa and eggs with metal-chelating agents (amino acids; Versene; DEDTC; oxine; cupron) ..... 1953 104 224

The role of fertilizin in the fertilization of eggs of the sea urchin and other animals ..... 1941 81 190
**Tyler A., and Bradley T. Scheer.** Natural hetero-agglutinins in the serum of the spiny lobster, Panulirus interruptus. II. Chemical and antigenic relation to blood proteins ..... 1945 89 193
**Tyler, A., and K. O'Melveny.** The role of antifertilizin in the fertilization of sea urchin eggs ..... 1941 81 364

## U

**Urchel, Harold C.** *See* John T. Bonner (abstract) ..... 1951 101 194

## V

**Vallowe, Henry H.** Some physiological aspects of reproduction in Xiphophorus maculatus ..... 1953 104 240
**van Dam, L.** *See* P. F. Scholander ..... 1953 104 75
**van Wagtendonk, W. J., F. A. Furman, E. L. Tatum and J. Field II.** Triturus toxin: Chemical nature and effects on tissue respiration and glycolysis ..... 1942 83 137
**Vasseur, Erik, Elsa Wicklund and John Runnström.** Respiration and fertilizing capacity of sea urchin sperm in presence of serum albumin and jelly coat solution (abstract) ..... 1950 99 324
**Velick, S. F.** The effect of centrifugation upon the oxygen consumption of Arbacia eggs (abstract) ..... 1941 81 303
**Vernberg, F. John, and Irving E. Gray.** A comparative study of the respiratory metabolism of excised brain tissue of marine teleosts ..... 1953 104 445
**Villee, Claude A.** An analysis of d-amino acid oxidase in invertebrate tissues (abstract) ..... 1947 93 220
A quantitative study of phenocopy with monochromatic ultraviolet irradiation ..... 1947 92 1
A study of nucleoproteins from invertebrate tissues (abstract). 1947 93 220
**Villee, Claude A., and Dorothy T. Balzer.** Phosphorus metabolism in developing sea urchin embryos as a function of temperature (abstract) ..... 1951 101 231
Studies on the metabolism of foetal and placental tissues (abstract) ..... 1951 101 195
**Villee, Claude A., and Harold B. Bissell.** Nucleic acids as growth factors in Drosophila (abstract) ..... 1947 93 213
**Villee, Claude A., and William R. Duryee.** Studies of phosphorus metabolism in ovarian eggs of the salamander T. pyrrhogaster (abstract) ..... 1951 101 231
**Villee, C. A., E. Leonard and A. Rich.** Studies in nucleoproteins from marine invertebrates (abstract) ..... 1948 95 280
**Villee, C. A., K. Linderström-Lang, M. Otteson, C. B. Anfinsen and D. Steinberg.** The enzymatic conversion of ovalbumin to plakalbumin (abstract) ..... 1950 99 322

**Villee, C. A., M. Lowens, M. Gordon, E. Leonard and A. Rich.** The incorporation of $P^{32}$ into the nucleoproteins and phosphoproteins of developing Arbacia embryos (abstract) ..... 1948 95 279
**Villee, C. A., Robert Lichtenstein, Neal Nathanson and Brita Rolander.** Phosphorus metabolism in embryonic and adult invertebrate tissues (abstract) ..... 1950 99 366
Studies of the carbohydrate metabolism of invertebrate tissues *in vitro* (abstract) ..... 1950 99 365
**Villee, C. A., Vivien White and A. Baird Hastings.** Studies on carbohydrate metabolism in mammalian muscle (abstract) .. 1950 99 312
**Villee, Claude A.** Studies of the metabolism of normal and mutant imaginal discs of Drosophila (abstract) ..... 1947 93 228
**Villee, C. A.** *See* Dorothy T. Balzer (abstract) ..... 1951 101 204
**Vishniac, Wolf, Roy Kisliuk and Seymour H. Hutner.** Ionic balance required by some marine micro-organisms and effect of quaternary ammonium ions (abstract) ..... 1950 99 328
**Vogel, Martin L.** *See* H. H. Plough (abstract) ..... 1949 97 221

## W

**Waidzunas, Richard J.** *See* Robert J. Menzies ..... 1948 95 107
**Wainio, Walter W., S. Cooperstein, S. Kollen and B. Eichel.** Preparation of a soluble cytochrome oxidase (abstract) .... 1947 93 214
**Wainio, W. W.** *See* Bertram Eichel (abstract) ..... 1948 95 239
*See* Bertram Eichel (abstract) ..... 1952 103 300
*See* Philip Person (abstract) ..... 1952 103 287
**Wait, Robert B.** The action of acetylcholine on the isolated heart of Venus mercenaria ..... 1943 85 79
**Wald, George, Neal Nathanson, William P. Jencks and Elizabeth Tarr.** Crustacyanin, the blue carotenoid-protein of the lobster shell (abstract) ..... 1948 95 249
**Wald, G.** *See* Martin P. Schulman (abstract) ..... 1951 101 239
*See* Robert C. C. St. George (abstract) ..... 1949 97 248
**Walford, Lionel A.** A new graphic method of describing growth of animals ..... 1946 90 141
**Walker, Theodore J.** *See* Edward D. Goldberg ..... 1951 101 274
**Walters, C. P.** *See* A. K. Keltch (abstract) ..... 1947 93 196
*See* A. K. Keltch (abstract) ..... 1949 97 242
*See* A. K. Keltch (abstract) ..... 1950 99 334
*See* G. H. A. Clowes (abstract) ..... 1949 97 234
*See* G. H. A. Clowes (abstract) ..... 1950 99 333, 335
*See* G. H. A. Clowes (abstract) ..... 1951 101 219, 220
**Walters, Vladimir.** *See* P. F. Scholander ..... 1950 99 225, 237, 259
*See* P. F. Scholander ..... 1951 101 178
**Wania, A.** *See* J. R. Shaver (abstract) ..... 1952 103 282
**Warner, Robert C., and Ione Weber.** Preparation and properties of the conalbumin of egg white (abstract) ..... 1950 99 323
**Warner, R. C., and Milton Levy.** Kinetics of denaturation of several proteins (abstract) ..... 1950 99 336

**Warner, Robert C.** *See* Milton Levy (abstract) ..... 1950 99 337
**Wasserman, E.** *See* George W. Hunter, III (abstract) ..... 1941 81 300
**Waterman, A.** Ectodermization of the larva of Arbacia (abstract) ..... 1941 81 304
**Watterson, Ray L.** Asexual reproduction in the colonial tunicate Botryllus schlosseri (Pallas) Savigny, with special reference to the developmental history of intersiphonal bands of pigment cells ..... 1945 88 71
Neural tube extirpation in Fundulus heteroclitus and resultant neural arch defects (abstract) ..... 1952 103 310
Some aspects of pigment deposition in feather germs of chick embryos (abstract) ..... 1941 81 304
The glycogen body as a derivative of the avian neural tube (abstract) ..... 1952 103 289
**Webb, H. Marguerite, and Frank A. Brown, Jr.** Diurnal rhythm in the controlling mechanism of distal retinal pigment of Palaemonetes (abstract) ..... 1951 101 231
**Webb, H. M., F. A. Brown, Jr. and Robert C. Graves.** The influence of light intensity and temperature on chromatophores of Palaemonetes vulgaris (abstract) ..... 1952 103 310
**Webb, H. M.** *See* F. A. Brown, Jr. (abstract) ..... 1952 103 297
**Weber, Ione.** *See* Robert C. Warner (abstract) ..... 1950 99 323
**Weber, Neal A.** Binary anterior ocelli in ants ..... 1947 93 112
**Weisel, George F.** The comparative effects of teleost and beef pituitary on chromatophores of cold blooded vertebrates .... 1950 99 487
**Weisel, G. F.** *See* Edgar A. Lazo-Wasem ..... 1952 102 25
**Weiss, Charles M.** Seasonal and annual variations in the attachment and survival of barnacle cyprids ..... 1948 94 236
The comparative tolerances of some fouling organisms to copper and mercury ..... 1947 93 56
The effect of illumination and stage of tide on the attachment of barnacle cyprids ..... 1947 93 240
**Weiss, C. M.** *See* Alfred C. Redfield ..... 1948 94 25
**Weiss, Paul.** Evidence of perpetual proximo-distal growth of nerve fibers (abstract) ..... 1944 87 160
**Weisz, Paul B.** Homoplastic grafting in Stentor coeruleus ..... 1951 100 116
Multiconjugation in Blepharisma ..... 1950 98 242
Phosphatases in normal and reorganizing Stentors ..... 1949 97 108
The space-time pattern of segment formation in Artemia salina 1946 91 119
**Weller, J. M.** *See* I. M. Taylor (abstract) ..... 1950 99 311
**Wells, Patrick H., and Arthur C. Giese.** Photo-reactivation of ultraviolet light injury in gametes of the sea urchin Strongylocentrotus purpuratus ..... 1950 99 163
**Wells, P. H.** *See* Arthur C. Giese ..... 1952 103 336
**Welsh, John H., and Alan G. Slocombe.** The mechanism of action of acetylcholine on the Venus heart ..... 1952 102 48
**Welsh, J. E., and Rae Taub.** The action of choline and related compounds on the heart of Venus mercenaria ..... 1948 95 346
**Welsh, J. E.** *See* Dorothy E. Bliss ..... 1952 103 157

**Wenrich, D. H.** Observations on the food habits of Entamoeba muris and E. ranarum ..... 1941 81 324
**West, William L.** *See* J. H. Bodine ..... 1952 102 16
*See* J. H. Bodine ..... 1953 104 1
**Westfall, Jane A.** *See* Charles B. Metz ..... 1953 104 408
**Whedon, W. Forest.** *See* Milton A. Miller ..... 1948 94 143
**Wheeler, Ambrose J.** Temporal variations in histological appearance of thyroid and pituitary of salamanders treated with thyroid inhibitors ..... 1953 104 250
**Whisenand, Alice.** *See* Edward D. Goldberg ..... 1951 101 274
**Whitaker, Douglas M.** Ultraviolet light and the development of Fucus eggs as affected by auxin and pH ..... 1942 82 127
**Whitaker, D. M., and W. E. Berg.** The development of Fucus eggs in concentration gradients: a new method for establishing steep gradients across living cells ..... 1944 86 125
**White, John D.** *See* W. L. Dolley, Jr. ..... 1951 100 84, 90
**White, Vivien.** *See* Claude A. Villee (abstract) ..... 1950 99 312
**White, W.** *See* E. L. Chambers (abstract) ..... 1948 95 252
**White, William E.** *See* E. L. Chambers (abstract) ..... 1949 97 225
**Whiteley, A.** *See* E. L. Chambers (abstract) ..... 1948 95 263
**Whiteley, George C., Jr.** Preliminary study of factors influencing distribution of bottom fauna in two narrow arms of Buzzards Bay (abstract) ..... 1949 97 250
**Whiting, Anna R.** Androgenetic males and X-ray induced cytoplasmic injury (abstract) ..... 1947 93 200
Dominant lethality and correlated chromosome effects in Habrobracon eggs X-rayed in diplotene and in late metaphase I ... 1945 89 61
Incidence and origin of androgenetic males in X-rayed Habrobracon eggs ..... 1948 95 354
Method of origin of androgenetic males in Habrobracon (abstract) ..... 1948 95 259
X-rays and cytoplasmic injury in Habrobracon eggs ..... 1949 97 210
**Whiting, P. W.** A strongly intersexual female in Habrobracon .. 1946 91 243
Intersexual females and intersexuality in Habrobracon ..... 1943 85 238
Spermatogenesis in sphecoid wasps (abstract) ..... 1947 93 218
Do genes exist? (abstract) ..... 1948 95 257
**Whiting, P. W., and Bertina M. Blaugh.** The genetic block to free oviposition in the chalcicoid wasp, Melittobia sp.-c (abstract) ..... 1948 95 243
**Whiting, P. W.** *See* Marion E. Kayhart (abstract) ..... 1949 97 344
**Wichterman, Ralph.** Action of X-rays on mating types and conjugation of Paramecium bursaria (abstract) ..... 1947 93 201
A simple method for obtaining large numbers of fission stages of Paramecium and certain other negatively geotropic ciliates (abstract) ..... 1950 99 366
Mating types and conjugation of four different races of P. calkinsi and the effect of X-rays on the mating reaction (abstract) ..... 1948 95 271

Occurrence of a new variety containing two opposite mating types of P. calkinsi as found in water of high salinity content (abstract) ... 1950 99 366
Studies on zoöchlorellae-free P. bursaria (abstract) ... 1941 81 304
The biological effects of X-rays on mating types and conjugation of P. bursaria ... 1948 94 113
The effects of X-rays upon conjugant and vegetative stages of P. calkinsi (abstract) ... 1951 101 232
The effects of X-rays upon dividing and non-dividing cells: P. caudatum (abstract) ... 1951 101 232
The hydrogen ion concentration in the cultivation and growth of eight species of Paramecium (abstract) ... 1948 95 272
**Wichterman, Ralph, and Frank H. J. Figge.** Environmental factors concerned with the lethality of X-rays in Paramecium (abstract) ... 1952 103 311
**Wichterman, Ralph.** *See* F. H. J. Figge (abstract) ... 1952 103 302
**Wicklund, Elsa.** *See* Erik Vasseur (abstract) ... 1950 99 324
**Wiercinski, Floyd J.** Activity of chromatophores in the integument of the squid (abstract) ... 1951 101 233
An experimental study of intracellular pH in the Arbacia egg (abstract) ... 1941 81 305
An experimental study of protoplasmic pH determination. I. Amoebae and Arbacia punctulata ... 1944 86 98
pH determinations in the giant nerve fiber of the squid (abstract) ... 1951 101 233
**Wiercinski, F. J.** *See* B. A. Cookson (abstract) ... 1949 97 226
**Wiersma, C. A. G.** *See* C. H. Ellis ... 1942 83 334
**Wilber, Charles G.** Blood and liver lipids in the northern pike, Esox lucius (abstract) ... 1951 101 197
Comparative study of lipids in fish (abstract) ... 1949 97 229
Digestion of fat in the rhizopod, Pelomyxa carolinensis ... 1942 83 320
Origin and function of the protoplasmic constituents in Pelomyxa carolinensis ... 1945 88 207
**Wilber, C. G., and Gerald R. Seaman.** Lipid metabolism in the protozoa (abstract) ... 1947 93 228
Synthesis of lipids from proteins in Colpidium campylum (abstract) ... 1947 93 214
The lipids in Colpidium campylum ... 1948 94 29
**Wilber, C. G., and Mary E. F. Twomey.** Vitamin A and lipid metabolism in the frog (abstract) ... 1947 93 211
**Wilber, C. G., and Winifred M. Bayors.** A comparative study of the lipids in some marine annelids ... 1947 93 99
**Wilber, C. G., Joel R. Lieb and G. M. Slane.** Lipids in frog blood (abstract) ... 1951 101 234
**Wilber, C. G., and Ruth P. Alscher.** Effect of temperature on light absorption by the cell-free coelomic fluid in Phascolosoma gouldii (abstract) ... 1947 93 202

**Wilber, C. G.** *See* Sister Elizabeth Seton MacDonald (abstract). 1947 93 209
*See* Sister Elizabeth Seton MacDonald (abstract) ..... 1949 97 246
*See* Sister Elizabeth Seton MacDonald (abstract) ..... 1951 101 225
**Wilbur, Karl M., and Louise H. Jodrey.** Studies on shell formation. I. Measurement of the rate of shell formation, using $Ca^{45}$ ..... 1952 103 269
**Wilbur, K. M., and Norman G. Anderson.** Carbonic anhydrase and growth in Ostrea and Busycon ..... 1950 98 19
**Wilbur, K. M., and Richard O. Recknagel.** The radiosensitivity of eggs of Arbacia punctulata in various salt solutions ..... 1943 85 193
**Wilbur, K. M.** *See* John A. Freeman ..... 1948 94 55
*See* R. Terrell Wingfield ..... 1949 96 9
**Wilhelmi, Raymond W.** The application of the precipitin technique to the theories concerning the origin of vertebrates ... 1942 82 179
Serological relationships between the Mollusca and other invertebrates ..... 1944 87 96
**Willey, C. H.** *See* H. W. Stunkard (abstract) ..... 1941 81 279
**Williams, Carroll M.** Physiology of insect diapause:
I. The role of the brain in the production and termination of pupal dormancy in the giant silkworm, Platysamia cecropia .. 1946 90 234
II. Interaction between the pupal brain and prothoracic glands in the metamorphosis of the giant silkworm, P. cecropia .... 1947 93 89
III. The prothoracic glands in the cecropia silkworm, with special reference to their significance in embryonic and post-embryonic development ..... 1948 94 60
IV. The brain and prothoracic glands as an endocrine system in the cecropia silkworm ..... 1952 103 120
Prothoracic glands of insects in retrospect and in prospect .... 1949 97 111
The effects of temperature gradients on the pupal-adult transformation of silkworms ..... 1942 82 347
**Williams, Carroll M., and Richard C. Sanborn.** The cytochrome system in relation to diapause and development in the cecropia silkworm (abstract) ..... 1948 95 282
**Williams, Carroll M., and Robert Galambos.** Oscilloscopic and stroboscopic analysis of the flight sounds of Drosophila ..... 1950 99 300
**Williams, C. M., Lewis A. Barness and Wilbur H. Sawyer.** The utilization of glycogen by flies during flight and some aspects of the physiological ageing of Drosophila ..... 1943 84 263
**Williams, Carroll M.** *See* Leigh E. Chadwick ..... 1949 97 115
**Willier, B. H.** Melanophore control of the sexual dimorphism of feather pigmentation in the Barred Plymouth Rock fowl (abstract) ..... 1944 87 153
**Willis, Marian, W. E. Love and M. H. Jacobs.** Observations on the hemolytic action of sodium taurocholate (abstract) .. 1947 93 202
**Willis, Marian.** *See* M. H. Jacobs (abstract) ..... 1947 93 223
**Wilson, D. L.** *See* J. F. Manery (abstract) ..... 1950 99 312
**Wilson, Donald F.** *See* Albert W. Sedar ..... 1951 100 107
**Wilson, Walter L.** Changes in the protoplasmic cortex during cell division (abstract) ..... 1950 99 341

**Wilson, Walter L., and L. V. Heilbrunn.** The protoplasmic cortex in relation to stimulation ..... 1952 103 139
A physical study of the protoplasmic cortex of the Chaetopterus egg (abstract) ..... 1951 101 213
**Wilson, Walter.** *See* L. V. Heilbrunn ..... 1948 95 57, 283
*See* L. V. Heilbrunn (abstract) ..... 1949 97 242
*See* L. V. Heilbrunn (abstract) ..... 1950 99 340
*See* L. V. Heilbrunn (abstract) ..... 1952 103 282, 303
**Wingfield, R. Terrell, and Karl M. Wilbur.** The effects of electrolytes and sugars on the erythrocytes of the turtle, Chelydra serpentina ..... 1949 96 9
**Witkus, E. Ruth.** Predictable mutations in bacteria (abstract) .. 1948 95 258
**Witmer, Ralph.** *See* Harold F. Blum (abstract) ..... 1950 99 317
**Wolf, E. Alfred, M. Dytche, J. D. O'Neal and M. Schaffel.** Heat produced by respiring whole blood of Tautoga onitis and Mustelus canis (abstract) ..... 1941 81 305
**Wollman, Seymour, and Edgar Zwilling.** Radio-iodine uptake in the chick embryo thyroid gland (abstract) ..... 1952 103 289
**Wood, R. D.** Characeae of the Woods Hole region, Massachusetts ..... 1949 96 179
**Woodard, T. M., Jr.** Behavior of the nurse-cells of Littorina irrorata Say ..... 1942 82 461
**Woodward, Arthur A., Jr.** Proteolytic enzymes in cytoplasmic granule preparations of Arbacia eggs (abstract) ..... 1949 97 264
Proteolytic enzymes in the eggs of the clam, Mactra solidissima (abstract) ..... 1950 99 367
Release of radioactive calcium ($Ca^{45}$) from muscle during stimulation (abstract) ..... 1949 97 264
**Wootton, Donald M.** *See* Demorest Davenport ..... 1952 102 100
**Wright, Paul A.** Effect of respiratory inhibitors on melanophoral activity of frog skin *in vitro* (abstract) ..... 1952 103 311
**Wright, Paul A., and James Sabal.** Effect of colchicine on melanophoral activity in excised frog skin (abstract) ..... 1952 103 312
**Wright, Paul A., and Robert P. Kohn.** Effect of crustacean eyestalk hormone on melanophore activity in the excised skin of the frog, Rana pipiens (abstract) ..... 1952 103 312
**Wrinch, Dorothy.** Biological specificity and protein structure (abstract) ..... 1948 95 247
Native proteins and the structure of cytoplasm (program title only) ..... 1941 81 286
Native protein crystallography and diffraction patterns (abstract) ..... 1944 87 157
Native protein networks and biological morphology (abstract) . 1947 93 202
Protein molecules with relatively low molecular weights (abstract) ..... 1951 101 234
Recent results regarding the structure of the globular proteins (abstract) ..... 1952 103 313
Structure of insulin and the cyclol hypothesis (abstract) ..... 1949 97 229

The bearing of new results in protein structure on cytological interpretations (abstract) ..... 1952 103 313
The cage hypothesis and a common feature of X-ray diffraction studies of crystalline proteins (abstract) ..... 1948 95 272
The particle status of proteins (abstract) ..... 1949 97 251
Water and biological function (abstract) ..... 1950 99 368
Water and biological morphology (abstract) ..... 1950 99 367
Water in protein crystals (abstract) ..... 1951 101 235
**Wu, C.** *See* A. M. Elliott (abstract) ..... 1952 103 301
**Wulff, V. J.** Characteristics of electrical activity in the lateral optic pathway of Limulus (abstract) ..... 1949 97 265
Duality in the electrical response of the lateral eye of Limulus polyphemus ..... 1950 98 258
Electro-physiological measurements on the eyes of Limulus and Loligo (abstract) ..... 1949 97 265
**Wulff, V. J., and Andrew A. Pandazi.** Characteristics of the retinal electric response of the ocelli of Limulus ..... 1951 101 114

## Y

**Yamada, Tuneo.** Dorsalization of the ventral marginal zone of the Triturus gastrula. I. Ammonia treatment of the medioventral marginal zone ..... 1950 98 98
**Yntema, C. L.** Effect of differences between stages of donor and host upon induction of auditory vesicle from foreign ectoderm in the salamander embryo (abstract) ..... 1941 81 306
**Young, Robert W.** *See* Martin W. Johnson (abstract) ..... 1947 93 122
**Yudkin, Warren H.** Transphosphorylation in annelid muscle (abstract) ..... 1950 99 352
**Yudkin, W. H.** *See* Ernest Baldwin (abstract) ..... 1948 95 273

## Z

**Zabor, J. William.** *See* Theodor von Brand ..... 1942 83 273
**Zeuthen, Erik.** Cartesian diver respirometer ..... 1950 98 139
Respiration during cell division in the egg of the sea urchin Psammechinus miliaris ..... 1950 98 144
Respiration and cell division in the egg of Urechis caupo ..... 1950 98 152
**Zimmerman, G. L.** *See* C. Ladd Prosser (abstract) ..... 1941 81 304
**Zinn, Donald J.** *See* John D. Ifft (abstract) ..... 1947 93 208
*See* John D. Ifft ..... 1948 95 100
**Zorzoli, Anita.** Alkaline phosphatase activity in normal and scorbutic bones (abstract) ..... 1950 99 321
Alkaline phosphatase in demineralized mouse bones of different ages (abstract) ..... 1948 95 240
Alkaline phosphatase in the early development of Fundulus heteroclitus (abstract) ..... 1947 93 211
**Zuckerkandl, Emil.** Coelomic pressures in Sipunculus nudus ..... 1950 98 161
**Zweifach, Benjamin W.** Peripheral circulatory changes during shock produced by hemorrhage (abstract) ..... 1944 87 161
**Zwilling, Edgar.** *See* Seymour H. Wollman (abstract) ..... 1952 103 289

# SUBJECT INDEX

## A


*Absorption spectra* of the blood of Eudistylia gigantea and of the pigment in the red corpuscles of Cucumaria miniata and Molpadia intermedia ..... 1945 **88** 30
*Abstracts* of papers presented at the Marine Biological Laboratory, summer session of ..... 1941 **81** 275
summer session of ..... 1942 **83** 290
summer session of ..... 1943 (nil)
summer session of ..... 1944 **87** 153
summer session of ..... 1945 **89** 184
summer session of ..... 1946 **91** 210
summer session of ..... 1947 **93** 189, 213
summer session of ..... 1948 **95** 238
summer session of ..... 1949 **97** 221
summer session of ..... 1950 **99** 321
summer session of ..... 1951 **101** 194
summer session of ..... 1952 **103** 277
*Abstracts* of papers presented at the meetings of the Society of General Physiologists, held at Woods Hole, Massachusetts, session of ..... 1946 **91** 236
session of ..... 1947 **93** 222
session of ..... 1948 **95** 281
session of ..... 1949 **97** 267
session of ..... 1950 **99** 308
*Acanthocolpidae.* Affinities of Deropristis inflata (Molin) ..... 1942 **82** 292
*Acartia tonsa,* vertical migration under controlled illumination ..... 1942 **82** 112
*Acclimatization* of marine fishes and resistance to changes 1942, **82**, 219, 1945 **88** 194
*Accommodation* measurement; a comparison of frog nerve and squid axon (abstract) ..... 1948 **95** 256
*Acetyl-B-methyl-choline* ("mecholyl"), action on heart of a cladoceran ..... 1949 **97** 138
*Acetylcholine,* action on arthropod hearts ..... 1942 **83** 145
action on heart of a cladoceran ..... 1949 **97** 138
action on intestine of Daphnia magna ..... 1941 **81** 105
action on isolated heart of Venus mercenaria ..... 1943 **85** 79
at a phase boundary, producing a wave of negativity (abstract) 1947 **93** 222
effects on permeability of erythrocytes (abstract) ..... 1950 **99** 311
mechanism of action on Venus heart ..... 1952 **102** 48
wave of negativity produced by, when conducted over an oil-saline interface (abstract) ..... 1948 **95** 281
*Acetylcholinesterase* activity and ciliary action (abstract) ..... 1950 **99** 347
*Acids, organic,* cortical response of sea urchin egg to ..... 1953 **104** 216
*Acrosome,* reaction to egg water and other stimuli ..... 1952 **103** 54

*ACTH,* effect on cleavage pattern of Arbacia ova (abstract)..... 1952 **103** 305
*Action* of ammonium chloride on surface membranes of Arbacia eggs..... 1948 **95** 267
of choline and related compounds on Venus heart..... 1948 **95** 346
of desoxyribonuclease (DN-ase) on cell nuclei..... 1952 **103** 319
of plant juices in chemotropism of Rhizopus..... 1953 **104** 100
of various enzymes on mating type substances of Paramecium calkinsi..... 1951 **101** 99
pattern of crystalline muscle phosphorylase (abstract)..... 1948 **95** 238
potential, related to protoplasmic streaming in Chara and Nitella (abstract)..... 1941 **81** 296
potentials in Limulus ocelli..... 1951 **101** 114
*Activation* of Cumingia and Arbacia eggs by bivalent cations..... 1941 **81** 261
of Nereis eggs by surface-active extract of dead sperm (abstract)..... 1952 **103** 305
*Activity* and distribution of desoxyribonuclease and phosphatases in the early development of Arbacia (abstract)..... 1948 **95** 250
and oxygen consumption of the gold fish; its application to the measurement of respiratory metabolism in fishes..... 1946 **91** 312
in a crustacean ganglion. I. Cardio-inhibition and acceleration in Panulirus argus..... 1953 **104** 156
of cholinesterase; effect of various suspension media on..... 1953 **104** 323
*Actomyosin,* free energy relations and contraction of..... 1949 **96** 140
thermodynamic theory of contraction (abstract)..... 1948 **95** 285
*Adaptation* to chemical stimulation of the tarsal receptors of the blowfly..... 1952 **103** 178
to cold in arctic and tropical mammals and birds..... 1950 **99** 259
*Addenda*..... 1949 **97** 344
*Addresses* delivered at the Lillie Memorial Meeting, Woods Hole, August 11, 1948..... 1948 **95** 151
*Adenosine-triphosphatase* (ATP-ase) in the giant nerve fiber of the squid (abstract)..... 1947 **93** 219
*Adenosine-triphosphate* (ATP) synthesis in fertilized sea urchin egg (abstract)..... 1949 **97** 225
and the luminescence of the "railroad worm" and other luminescent organisms (abstract)..... 1949 **97** 257
*Adrenal* preparations, effect on tumor growth..... 1952 **102** 226
*Adrenalin,* hypersensitization to, by denervation, of catfish melanophores (abstract)..... 1941 **81** 302
*Aelosoma hemprichi* (Ehr), cyst formation in..... 1950 **99** 173
*Aerobic carbohydrate consumption* of fresh water snails..... 1950 **98** 266
*Ageing,* physiological, in Drosophila..... 1943 **84** 263
*Agglutination* of fish and turtle erythrocytes by viruses..... 1952 **102** 149
of fish erythrocytes by normal human sera..... 1952 **103** 328
of starfish sperm by fertilizin..... 1945 **89** 84
*Aggregation stage* in slime mold development..... 1952 **103** 259
*Aggregative center formation* by mixtures of wild and aggregateless slime molds..... 1952 **103** 446
*Agrotis,* thoracic movements and potentials in flight of..... 1951 **100** 95

*Air density*, stroke amplitude as a function of, in flight of Drosophila ..... 1951 100 15
*Albumen* of developing avian egg ..... 1944 87 223
*Alcohol*, ethyl, effects on growth and respiration in Pelomyxa ..... 1952 103 97
*Alga* (Ascophyllum), uptake of radioactive iodine by ..... 1951 100 188
*Algae* as food for oyster larvae ..... 1953 104 334
blue-green, chlorophyll preparations from (abstract) ..... 1950 99 364
blue-green, photosynthesis and photo-reduction in ..... 1949 97 269 1950 99 157
brown, xanthophylls and carotenes of ..... 1944 86 169
green, effect of ultraviolet light on (abstract) ..... 1949 97 268
flagella of ..... 1952 103 74
nitrogen deficiency and coloration in (abstract) ..... 1950 99 360
reproduction in (Dudresnaya crassa, Howe) ..... 1950 99 272
respiration and iodine uptake in ..... 1950 99 370 1953 104 138
role of auxin in ..... 1951 101 300
study of hydrogenase systems of green and blue-green (abstract) ..... 1949 97 261
unicellular; time-course studies of photosynthesis and respiration (abstract) ..... 1949 97 271
Woods Hole region, bryozoa associated with ..... 1949 96 32
*Alkaline phosphatase* in demineralized mouse bones of different ages (abstract) ..... 1948 95 240
in mollusc mantles ..... 1952 102 9
in the early development of Fundulus heteroclitus (abstract) .. 1947 93 211
*Alkaline phosphatase activity* in development of Arbacia (abstract) 1947 93 209
in early development of amphibians (abstract) ..... 1947 93 215
in kidneys of marine teleosts ..... 1950 99 152
in normal and scorbutic bones (abstract) ..... 1950 99 321
in oöcytes of various marine invertebrates (abstract) ..... 1947 93 209
*Alkaline sea water*, reaction of acrosome to ..... 1952 103 54
*Alkyl amines*, halogenated; effects on sea urchin egg division ..... 1952 103 44
*Allantoic and amniotic fluids*, changes under normal and extreme temperatures ..... 1943 84 141
*Allium cepa*, action of saponin on root growth ..... 1951 100 1
electron microscope studies of mitosis in ..... 1951 100 107
*Allium*, cytology of (abstract) ..... 1944 87 163
toxicity responses of dividing nuclei (abstract) ..... 1949 97 235
*Allometry* in normal and regenerating antennal segments in Daphnia ..... 1941 81 119
*Alloxan*, mechanism of action; reaction with sulfhydryl groups; glutathione content of islet tissue (abstract) ..... 1948 95 276
production of diabetes in the toadfish with (abstract) ..... 1947 93 219
*Allyl-thiourea*, effect on histology of salamander thyroid and pituitary ..... 1953 104 250
*Alopias vulpinus*, inter-renal body (abstract) ..... 1941 81 299
*Amaroecium constellatum*, developmental history:
I. Early embryonic development ..... 1945 88 126
II. Organo-genesis of the larval action system ..... 1946 91 66

III. Metamorphosis ..... 1952 103 226
regeneration in early zooid (abstract) ..... 1941 81 287
*Amblopites rupestris*, swim bladder content and hydrostatic pressure ..... 1942 82 138
*Amblystoma*, methyl green stainability of nucleic acids in tissues of. 1952 103 145
neurulation in mechanically and chemically inhibited ..... 1943 85 103
pigment suppression in A. mexicanum; A. punctatum; A. tigrinum; analysis of ..... 1951 100 127
*Ameiurus melas*, role of hypophysis in melanogenesis ..... 1941 81 352
*Amino acids*, determination of, in invertebrates (abstract) ..... 1949 97 263
effects on spermatozoa (abstract) ..... 1950 99 324
isolation of by ion-exchange resins (abstract) ..... 1951 101 194
order of, in silk (abstract) ..... 1948 95 240
treatment of sea urchin gametes with ..... 1953 104 224
*Ammonia* production (anaerobic) by amphibian gastrulae explants 1952 102 22
treatment of Triturus gastrula ..... 1950 98 98
utilization by Chilomonas (abstract) ..... 1941 81 285
*Ammonium chloride*, effects on Arbacia egg (abstract) ..... 1948 95 267
*Ammonium ion* effects on marine organisms (abstract) ..... 1950 99 328
*Amniotic* and allantoic fluids; changes under normal and extreme temperature conditions ..... 1943 84 141
*Amoeba carolinensis* (Wilson, 1900) ..... 1946 90 8
*Amoeba*, effects of ethyl alcohol on growth and respiration ..... 1952 103 97
hydrogen ion concentration of cytoplasm and food vacuoles... 1942 83 173
oxygen consumption in single specimens ..... 1952 102 178
spindle development and behavior in ..... 1948 94 169
*Amoeba verrucosa*, cytology of (abstract) ..... 1941 81 299
*Amoebae*, experimental study of protoplasmic pH determination in. 1944 86 98
period of quiescence in the response to light by ..... 1947 93 45
*Amphibia*, alkaline phosphatase activity in early development of (abstract) ..... 1947 93 215
effect of maleic hydrazide on embryonic and larval growth.... 1951 101 285
effect of parrot fish thyroid on metamorphosis ..... 1951 101 157
*Amphibian gastrulae explants*, anaerobic ammonia production by.. 1952 102 22
respiratory metabolism of ..... 1952 103 407
*Amphibian regeneration* (abstract) ..... 1950 99 351
*Amphitrite ornata* (Leidy), lipids in cells of body cavity fluid (abstract) ..... 1949 97 253
*Amylase*, biliary, in the domestic fowl ..... 1943 84 240
*Anaerobic metabolism* and aerobic carbohydrate consumption of some fresh water snails ..... 1950 98 266
of fresh water snails ..... 1951 100 199
*Anaerobiosis* in snails ..... 1953 104 301
*Analysis* of the aggregation stage in the development of the slime molds (Dictyosteliaceae):
I. The populational distribution of the capacity to initiate aggregation ..... 1952 103 259
II. Aggregative center formation by wild type and aggregateless Dictyostelium discoideum ..... 1952 103 446

of the cortical response of sea urchin eggs to reagents.... 1953 **104** 210, 216
of the molting process in the fiddler crab, Uca pugilator..... 1953 **104** 115
*Anaphase movement* in the aphid, Tamalia..... 1943 **85** 164
of chromosomes in the spermatocytes of grasshopper..... 1949 **96** 90
*Anatomy* of Phoronopsis..... 1953 **104** 182
*Androgenesis*, a differentiator of cytoplasmic injury induced by X-rays in Habrobracon eggs..... 1949 **97** 210
incidence and origin of, in X-rayed Habrobracon eggs..... 1948 **95** 354
*Androgenetic eggs* of Triturus viridescens..... 1941 **81** 402
*Androgenetic frog hybrids*..... 1950 **99** 88
competence of gastrula ectoderm in..... 1953 **104** 68
*Androgenetic males* and X-ray induced cytoplasmic injury (abstract)..... 1947 **93** 200
*Androgens*, some effects on Fundulus..... 1942 **82** 233
*Angiotonin*, effect on arterioles, with hypertensive and normal rabbits (abstract)..... 1941 **81** 293
*Anguilla rostrata*, adaptive changes in chloride cells of..... 1950 **99** 439
*Anionic detergents*, hemolytic action of (abstract)..... 1949 **97** 227
*Annelid*, marine (Nereis vexillosa), life history studies..... 1943 **84** 106
muscle, transphosphorylation in (abstract)..... 1950 **99** 352
*Annelids*, a comparative study of the lipids in..... 1947 **93** 99
glucose metabolism in marine (abstract)..... 1949 **97** 246
phosphagen in (abstract)..... 1948 **95** 273
*Annual cycle* in reproduction of Phoronopsis..... 1953 **104** 182
*Annual history* of a natural population of Nereis diversicolor..... 1951 **101** 131
*Annual reports*, (M.B.L.), 1940–1952, see Marine Biological Laboratory.....
*Anodonta grandis*, calcification of shell..... 1952 **102** 9
*Anoxia* in chicks and ducklings, relation of blood oxygen transport to resistance..... 1947 **92** 23
*Ant colonies*, founding of..... 1941 **81** 392
*Antennal cuticle* of honeybees, studies on..... 1952 **103** 201
*Anti-cholinesterases*, effect on conduction (abstract)..... 1948 **95** 241
*Anti-coagulants* of vertebrate blood, insect hemolymph reactions to. 1953 **104** 372
*Anti-fertilizin* and fertilization of sea urchin eggs..... 1941 **81** 364
*Antigens*, erythrocyte, of fish..... 1952 **103** 328
*Antimitotic effect* of rotenone, alleviation by alpha-tocopherol (abstract)..... 1951 **101** 208
*Antimitotic substances* secreted from eggs (abstract)..... 1951 **101** 214
*Antithyroid drugs*, effects on iodine uptake in frogs..... 1951 **101** 62
*Ants*, binary anterior ocelli in..... 1947 **93** 112
*Anxiety states*, hippuric acid excretion in (abstract)..... 1948 **95** 246
*Aphid*, a quantitative study of the anaphase movement in..... 1943 **85** 164
production of types and general differences..... 1943 **85** 60
*Aplexa nitens*, oxygen consumption and tension in..... 1953 **104** 301
*Application* of the most probable number method to determine heat sensitivity of protozoa..... 1952 **103** 364
*Apyrase activity* of invertebrate marine muscle (abstract)..... 1948 **95** 281

*Apyrase systems,* temperature coefficients of, from muscles of different animals (abstract) ..... 1948 95 287
*Arbacia,* alkaline phosphatase activity in developmental stages (abstract) ..... 1947 93 209
development as affected by theobromine and theophylline (abstract) ..... 1949 97 234
*Arbacia egg,* action of ammonium chloride on surface membranes (abstract) ..... 1948 95 267
action of heparin on fertilization (abstract) ..... 1950 99 340
cleavage by podophyllotoxin and related substances (abstract) . 1947 93 192
cleavage, acceleration of, in hypotonic sea water (abstract) ... 1941 81 288
cleavage, retardation by dinoflagellate-contaminated sea water ("red tide") (abstract) ..... 1947 93 205
cleavage time as affected by ultraviolet light (2537 Å) (abstract) ..... 1949 97 241
combined effect of ultraviolet light and heat upon first cleavage (abstract) ..... 1948 95 259
effect of centrifugation on oxygen consumption (abstract) .... 1941 81 303
effect of dinitro-cresol on oxygen consumption and cell division in artificially fertilized as compared with sperm fertilized (abstract) ..... 1947 93 196
effect of radio-phosphorus on division time (abstract) ..... 1950 99 358
effect of ultraviolet radiation on rate of cell division (abstract) 1949 97 232
effects of cortisone and desoxycortico-sterone (abstract) ..... 1950 99 357
effects of halogenated alkyl amines on division ..... 1952 103 44
effects of pressure on insemination reactions (abstract) ..... 1948 95 251
exchange of radioactive calcium (abstract) ..... 1950 99 339
inhibition of cell division ..... 1953 104 263
inhibition of cleavage (abstract) ..... 1949 97 234
inhibition of development by ammonium chloride (abstract) ... 1948 95 267
intracellular pH (abstract) ..... 1941 81 305
lipo-protein complexes in (abstract) ..... 1941 81 296
on the relation between oxygen consumption, fertilization membrane formation, and cell division in artificially fertilized (abstract) ..... 1947 93 195
oxidative phosphorylation by a cell-free particulate enzyme system from (abstract) ..... 1949 97 242
permeability to potassium (abstract) ..... 1941 81 295
phosphorylation in cell-free extracts of (abstract) ..... 1949 97 234
phosphorylation of an enzyme system derived from (abstract) . 1950 99 333
photodynamic studies on (abstract) ..... 1941 81 297
photography of with infra-red light (abstract) ..... 1950 99 360
photo-recovery in (abstract) ..... 1950 99 342
proteolytic enzymes in cytoplasmic granule preparations of (abstract) ..... 1949 97 264
recovery from ultraviolet light-induced delay in cleavage 1949 97 315 (abstract) 1949 97 244
respiration of (abstract) ..... 1950 99 335

rhythmic alterations in certain properties of (abstract) ..... 1949 97 233
some effects of homotypic extracts of on cleavage rate ..... 1942 83 245
temperature alteration of carbamate narcosis of (abstract) .... 1950 99 338
the effect of low temperatures and of hypotonicity on the morphology of the cleavage furrow ..... 1946 91 272
*Arbacia,* electrical method for "sexing" (abstract) ..... 1952 103 284
gametes, viability in relation to time (abstract) ..... 1950 99 354
inhibition of fertilization by blood extracts ..... 1948 95 69
inhibitor effects on mitotic phases of (abstract) ..... 1950 99 362
jelly coat and membrane formation (abstract) ..... 1950 99 339
larva, ectodermization of (abstract) ..... 1941 81 304
ova, deformation delay in caffeine solutions (abstract) ..... 1947 93 191
*Arbacia punctulata,* caffeine effects on fertilization and development ..... 1948 94 16
dilution medium and survival of the spermatozoa:
I. Effect of the medium on fertilizing power ..... 1945 89 162
II. Effect of the medium on respiration ..... 1946 90 177
echinochrome concentration (abstract) ..... 1949 97 231
effects on spermatozoa of hydrogen peroxide produced in the medium by radiation ..... 1947 92 99
egg, centrifuged, vital staining of ..... 1941 81 114
egg, influence of glycolysis on potassium and sodium content (abstract) ..... 1949 97 260
egg, photographed by ultraviolet light ..... 1944 86 163
egg, radio-sensitivity in various salt solutions ..... 1943 85 193
egg, rate of breaking and size of "halves" when centrifuged in hypo- and hypertonic sea water ..... 1943 85 141
egg, stratification and breaking of, when centrifuged in single salt solutions ..... 1945 89 72
egg, stratification and deformation of, when centrifuged in caffeine solutions ..... 1949 96 70
eggs and larvae, exposed to phosphate and sodium ions ..... 1943 84 213
eggs and sperm, intermediary carbohydrate metabolism before and after fertilization (abstract) ..... 1941 81 289
experimental study of protoplasmic pH determination in ..... 1944 86 98
growth of arms in the pluteus ..... 1950 98 34
leucocytes of ..... 1950 98 46
metabolic activities and cleavage of eggs ..... 1950 98 175
permeability of eggs to radioactive phosphorus (abstract) .... 1947 93 203
pluteus, growth and metamorphosis ..... 1949 97 287
pluteus, growth and metamorphosis (abstract) ..... 1949 97 223
ribonuclease activity in the development of (abstract) ..... 1949 97 255
spermatozoon and fertilization membrane, as shown by the electron microscope ..... 1943 85 151
the distribution of phosphorus in the unfertilized egg (abstract) ..... 1947 93 192
treatment of gametes with metal-chelating agents ..... 1953 104 224
uptake and loss of $K^{42}$ (abstract) ..... 1949 97 251

*Arbacia sperm*, effect of sea water on radiosensitivity (abstract).. 1941 81 282
photorecovery in (abstract)..... 1950 99 342
(*See* also further titles under *Sea urchin*)
(*See* also further titles under *Egg, Eggs*)
*Arctic mammals and birds*, adaptation in..... 1950 99 225, 237, 259
*Arctonoë*, studies of the physiology of commensalism in:
I. The polynoid genus Arctonoë..... 1950 98 81
II. The genera Arctonoë and Halosydna..... 1951 100 71
*Arcnicola*, electrocardiogram of..... 1950 98 254
*Arcnicola marina* (Lamarck), lipids in cells of body cavity fluid (abstract)..... 1949 97 253
*Arm growth* in pluteus of Arbacia punctulata..... 1950 98 34
*Army-ant* behavior pattern; nomad-statary relations in the swarmers and the problem of migration..... 1945 88 166
*Arsenite*, effect on respiration in Pelomyxa..... 1944 87 138
*Arseno-acetic acid*, effects on enzymes in Colpidium campylum (abstract)..... 1949 97 246
*Artemia salina*, the space-time pattern of segment formation..... 1946 91 119
*Arterioles*, behavior after angiotonin injections in rabbits (abstract)..... 1941 81 293
*Arthropod cuticle studies* with electron microscope..... 1948 94 212
with particular reference to the antennal sense plates of honeybees..... 1952 103 201
*Arthropod muscle fiber*, effects of calcium ion upon..... 1952 103 421
*Arthropods*, action of acetylcholine on hearts..... 1942 83 145
blood coagulation in..... 1953 104 372
*Ascidia ceratodes*, uptake of vanadium by..... 1951 101 84
*Ascidian larvae*, metamorphosis (abstract)..... 1941 81 286
*Ascidians:* cross and self-fertilization—in Molgula manhattensis... 1942 82 172
in Styela..... 1942 82 161
*Ascophyllum*, respiration and iodine uptake..... 1953 104 138
uptake of radioactive iodine..... 1951 100 188
*Asclomaris michaeli*, a new gymnoblastic hydroid; life cycle of.... 1948 95 289
*Asexual reproduction* in the colonial tunicate, Botryllus schlosseri (Pallas) Savigny, with special reference to the developmental history of intersiphonal bands of pigment cells..... 1945 88 71
*Assimilation of iron* by marine diatoms..... 1952 102 243
*Astacuran crustacea*, serological comparisons..... 1952 103 433
*Astasia klebsii*, respiration of..... 1942 82 356
*Asterias egg*, nuclear and cytoplasmic interrelations in fertilization..... 1949 96 270
*Asterias forbesi*, ciliary transport system of..... 1942 83 438
eggs and larvae exposed to phosphate and sodium ions..... 1943 84 213
respiration of oöcytes, unfertilized eggs and fertilized eggs.... 1948 95 124
*Astropecten marginatus*, ecological observations on..... 1944 87 177
*Atherinops and Fundulus*, experiments with..... 1945 88 194
*Atlantic Coast turbellarian fauna*, notes on..... 1952 103 195
*Atmospheric pressure effects* on flight of Drosophila..... 1949 97 115

*ATP* (adenosine-triphosphate) and reversal of cell division inhibition in eggs ... 1953 **104** 263
*Atropine*, action on intestine of Daphnia ... 1941 **81** 105
*Attachment and growth* of barnacles, effect of water currents upon. 1946 **90** 51
*Attachment and growth* of Bugula neritina, toxic effects of copper upon ... 1946 **90** 122
*Attachment fibers* and blastomere positions in sea urchin larvae... 1952 **102** 58
*Attachment of barnacle cyprids*, the effect of illumination and stages of tide upon ... 1947 **93** 240
*Attachment of fouling organisms*, role of slime film in ... 1948 **94** 143
*Auditory vesicle* in salamander embryo; effect upon induction of differences between stages of donor and host (abstract) .... 1941 **81** 306
*Australorbis glabratus*, oxygen consumption and oxygen tension... 1953 **104** 301
*Autogamy* of Paramecia aurelia, grown on non-living media (abstract) ... 1951 **101** 205
*Autolysis* of fish muscle ... 1942 **83** 129
*Autosomal elimination* and preferential segregation in the harlequin lobe of certain Discocephalini (Hemiptera) ... 1946 **90** 265
*Auxin*, and pH: effect on Fucus egg development in ultraviolet light 1942 **82** 127
as hormonal factor limiting differentiation of xylem cells around a wound (abstract) ... 1951 **101** 196
control of rhizoid formation in Bryopsis (abstract) ... 1951 **101** 238
effects in Bryopsis (abstract) ... 1950 **99** 369
role of in algae ... 1951 **101** 300
*Avian serological relationships* ... 1942 **83** 205
*Axolotl eggs*, induction of triploidy and haploidy in, by cold treatment ... 1942 **83** 367
*Axolotl larvae*, analysis of pigment suppression in ... 1951 **100** 127
*Axon*, giant, of squid, electrically induced changes in (abstract)... 1950 **99** 345
observations on structure (abstract) ... 1950 **99** 345
rectifying property of (abstract) ... 1941 **81** 277
*Axoplasm* of the giant nerve fiber of the squid; low frequency characteristics (abstract) ... 1950 **99** 344
shape of oil drops injected into (abstract) ... 1947 **93** 191
*Azide*, effect on Cypridina luciferin (abstract) ... 1941 **81** 283
and cell division inhibition in Arbacia eggs ... 1953 **104** 263
and cyanide, effect on the development of frog eggs ... 1945 **89** 122

## B

*Bacillus subtilis*, studies on the poly-D-glutamic acid of (abstract). 1952 **103** 291
*Background illumination* as a factor in the attachment of barnacle cyprids ... 1945 **88** 44
*Bacteria* and cellular activities. IV. Action of toxins on respiration and hemolysis of dogfish erythrocytes and on respiration of marine eggs ... 1949 **97** 57
predictable mutations in (abstract) ... 1948 **95** 258
*Bacterial toxins;* effect on permeability of dogfish erythrocytes (abstract) ... 1948 **95** 255

*Balantidial infection* in tadpoles, as recorded by cinephoto-micrography (abstract) ... 1952 103 285
*Barentsia laxa* (Kirkpatrick, 1890) ... 1948 94 128
*Barnacle attachment* and surface illumination ... 1948 94 33
*Barnacle cyprids*, effect of illumination and stage of tide upon the attachment of ... 1947 93 240
seasonal and annual variations in attachment and survival ... 1948 94 236
*Barnacles*, effect of water currents upon attachment and growth ... 1946 90 51
*Barnacles*, surface angle influence on attachment ... 1942 82 14
and mussels, poisoning and recovery in ... 1947 92 73
and some other marine organisms, replication of substrate detail by ... 1948 94 161
*Basal mat development* in Hydractinia (abstract) ... 1948 95 260
*Basophilia* of nucleic acids ... 1952 103 145
*Bass*, large-mouthed black; studies of digestive tracts and digestive enzymes ... 1951 100 244
*Bats* (Chiroptera), body temperatures and metabolic rates ... 1951 101 289
*Bean*, kidney, control of elongation of hypocotyl (abstract) ... 1950 99 329
*Beef pituitary*, effects on water retention by frogs ... 1952 102 25
*Bees*, orientation of by use of polarized light (abstract) ... 1950 99 326
*Beetle*, wood-eating, changes in water content during life cycle ... 1944 86 23
*Behavior* and responses of white-footed mice to changes of temperature ... 1953 104 87
and tube-building habits of Polydora ligni (abstract) ... 1944 87 164
of the cell surface during cleavage ... 1947 93 139
of the cell surface during cleavage (abstract) ... 1947 93 163
*Bermudan crustaceans*, bleeding and coagulation in ... 1952 103 395
*Bermudan sea urchins* and their eggs (abstract) ... 1947 93 217
*Beta-mercapto-ethylamine* as protective agent against irradiation damage to Spisula gametes ... 1953 104 197
*Beta-phosphonopropionic acid* effects on enzyme systems in Colpidium campylum (abstract) ... 1949 97 246
*Bicarbonates*, catalysis of ionic exchanges by (abstract) ... 1941 81 294
*Binding capacity* of hemocyanin and serum albumin for organic ions (abstract) ... 1947 93 218
*Biochemical factors* in the maximal growth of Tetrahymena ... 1944 87 107
*Biochemical properties* of succinoxidase from Salmonella aertrycke (abstract) ... 1949 97 222
*Biochemical requirements* (mutations in) of Salmonella typhimurium (abstract) ... 1949 97 221
*Biochemical and histochemical* observations on the sexual dimorphism of mouse submaxillary glands (abstract) ... 1948 95 243
*Biochemistry* of Tetrahymena: IV ... 1945 89 131
VII ... 1945 89 229
*Bio-electrical models* of energy transformation in nerve (abstract) ... 1949 97 268
*Bio-electricity*, phase boundary theory of (abstract) ... 1950 99 314
*Biological effects* of X-rays on mating types and conjugation of Paramecium bursaria ... 1948 94 113
*Biological specificity* and protein structure (abstract) ... 1948 95 247

*Biology* of the California sea mussel, Mytilus californianus..... 1944 87 59
of the luminous millipede, Luminodesmus sequoiae..... 1952 102 100
*Birefringence* of granules in leaf epidermis of Spinacea oleracea (abstract)..... 1951 101 215
within striated muscle fiber..... 1949 97 231
*Blastoderm,* chick; respiratory rates of different regions during early stages (abstract)..... 1941 81 283
*Blastomeres,* developmental potencies in egg of Saccoglossus (Dolichoglossus) kowalevskyi (abstract)..... 1949 97 237
isolated, uptake of oxygen by..... 1951 101 47
means of fixation of mutual positions, in sea urchin larvae.... 1952 102 58
*Blastula* stage, in sea urchins; cyto-embryological studies of..... 1952 102 74
*Bleeding and coagulation* in some Bermudan crustaceans..... 1952 103 395
*Blepharipoda occidentalis* Randall, pelagic larval stages..... 1942 83 67
*Blepharisma,* a cytotoxin from..... 1949 97 145
multi-conjugation in..... 1950 98 242
*Blood anti-coagulant* from surf clams (abstract)..... 1951 101 230
*Blood,* canine; kinetics of potassium exchange between cells and plasma (*in vitro,* using $K^{42}$) (abstract)..... 1948 95 287
coagulation in arthropods. III. Reactions of insect hemolymph to coagulation inhibitors of vertebrate blood..... 1953 104 372
coagulation in certain decapod crustaceans (abstract)..... 1952 103 315
effect of carbon dioxide and lactic acid on the oxygen-combining power of whole and hemolysed, in Tautoga onitis Linn... 1943 84 207
effects of desoxycortico-sterone and related compounds on the mammalian red cell (abstract)..... 1941 81 295
equilibrium between hemoglobin and oxygen of whole and hemolysed, in tautog..... 1941 81 307
extracts, inhibition of fertilization by, in Arbacia..... 1948 95 69
heat produced by, in Tautoga and Mustelus (abstract)..... 1941 81 305
*Blood-sugar concentration* in crustaceans, studies in the regulation of: I..... 1949 96 218
II..... 1950 99 454
*Blowfly,* adaptation of tarsal receptors to chemical stimulation.... 1952 103 178
carbohydrate taste thresholds and nutritive values..... 1950 99 446
relation between olfactory response and receptor population... 1952 102 111
*Blue crab,* Callinectes sapidus Rathbun, morphology of zoeal stages of..... 1944 87 145
*Body insulation* in mammals and birds..... 1950 99 225
*Body temperature* of bats..... 1951 101 289
*Body temperatures* of white-footed mice in relation to environmental temperature and to heat and cold stress..... 1953 104 87
*Bone marrow,* synthesis reactions with acetic acid (abstract)..... 1948 95 284
*Bones,* mouse, of different ages, alkaline phosphatase in demineralized (abstract)..... 1948 95 240
phosphatase activity in (abstract)..... 1950 99 321
*Botryllus schlosseri* (Pallas) Savigny, asexual reproduction in, with special reference to the developmental history of intersiphonal bands of pigment cells..... 1945 88 71

*Brachystethus rubromaculatus* Dallas; the elimination of chromosomes in the meiotic divisions of..... 1946 90 19
*Brachyuran crab,* a serological analysis of a systematic position for. 1951 100 44
*Brachyuran Crustacea,* neurosecretory system of the..... 1952 103 157
*Brain and thoracic glands* as an endocrine system in the Cecropia silkworm..... 1952 103 120
*Brain tissue* of marine teleosts, respiratory metabolism of..... 1953 104 445
*Breeding larvae* of Venus mercenaria in the laboratory..... 1950 98 60
*Bresslaua,* feeding mechanisms and nutrition in..... 1941 81 221
*Bresslaua insidiatrix,* oxygen consumption of single specimens..... 1952 102 178
*Bromphenol blue,* mercuric; staining and measurement of protein with..... 1953 104 57
*Brood production* in Lebistes..... 1952 102 30
in Xiphophorus..... 1953 104 240
*Bryopsis,* auxin effects in (abstract)..... 1950 99 369
rhizoid formation in..... 1951 101 300
*Bryozoa* associated with marine algae of the Woods Hole region.. 1949 96 32
fresh water, studies on; XVI. Fredericella australiensis, var. browni (new variety)..... 1945 89 215
marine, studies on: Series I. to IV. (*See* Studies)
*Bud formation* in plant tissues, chemical induction of (abstract)... 1949 97 268
*Buffers,* non-toxic, piperazine dihydrochloride and glycylglycine as. 1949 96 233
*Bufo fowleri,* increase of cortical calcium with age..... 1942 82 392
*Bugula larvae,* factors influencing metamorphosis..... 1952 103 369
responses to light and gravity..... 1949 97 302
*Bugula neritina,* behavior and metamorphosis of larva..... 1947 92 115
toxic effects of copper on attachment and growth..... 1946 90 122
*Bursaria truncatella,* excystment in..... 1948 94 86
*Busycon canaliculatum,* carbonic anhydrase and growth..... 1950 98 19
histology of the radula protractor muscles..... 1942 82 190
mucus formation and secretion in..... 1952 102 252
occurrence of myoglobin in (abstract)..... 1947 93 189

## C

*Caffeine effects* on centrifuged eggs of Arbacia punctulata..... 1949 96 70
on centrifuged ova of A. punctulata (abstract)..... 1947 93 191
on fertilization and development in Arbacia punctulata..... 1948 94 16
*Cage hypothesis,* and a common feature of X-ray diffraction studies of crystalline proteins (abstract)..... 1948 95 272
*Calcification in marine molluscs:*
I. Initial conditions and formations..... 1948 94 176
II. Localization of ingested inorganic elements (abstract).... 1951 101 197
III. Source, transport and deposition of calcium and phosphorus..... 1952 102 9
*Calcium,* and temperature effect on furrowing in Arbacia punctulata (abstract)..... 1951 101 229
cortical, increase in various animal cells, as shown by microincineration..... 1942 82 392
cortical, increase with age in cells of Elodea canadensis..... 1942 82 385

determination, new method for (abstract) ..... 1951 101 222
effects on isolated arthropod muscle fibers ..... 1952 103 421
lytic action of, on pigment of Arbacia egg (abstract) ..... 1951 101 209
*Calcium ion effect* on metamorphosis of Bugula larva ..... 1952 103 369
*Calcium-low* sea water, effects on the otolith of Molgula manhattensis (abstract) ..... 1949 97 236
*Calcium, radioactive* ($Ca^{45}$), exchange in Arbacia eggs (abstract) . 1950 99 339
in measuring calcium uptake and turnover in oysters ..... 1953 104 398
intake and deposition in shell formation of molluscs ..... 1952 102 9
release from muscle during stimulation (abstract) ..... 1949 97 264
use in measuring rate of shell formation ..... 1952 103 269
*California sea mussel,* Mytilus californianus, biology of ..... 1944 87 59
*Callinectes sapidus* Rathbun, effects of calcium on isolated muscle fibers ..... 1952 103 421
external morphology as affected by a sacculinid parasite ..... 1950 98 277
morphology of the zoeal stages ..... 1944 87 145
*Calliphora,* thoracic movements and potentials in flight of ..... 1951 100 95
*Cambarus,* control of the cement gland development ..... 1952 103 242
*Campanularia* colonies, growth of (abstract) ..... 1950 99 357
*Cancer irroratus,* action of electrical stimulation and of certain drugs on cardiac nerves of ..... 1947 93 72
*Cancer magister* Dana, cardiac pharmacology of ..... 1942 82 255
*Cancerous mice,* attempt to influence survival time of (abstract) .. 1952 103 282
*Cape Cod,* marine sand-dwelling ciliates of ..... 1951 100 59
marine sand-dwelling ciliates of (abstract) ..... 1950 99 349
*Capillary bed* of the central nervous system of certain invertebrates ..... 1944 87 52
*Carassius auratus,* studies of the digestive tract and digestive enzymes of ..... 1951 100 244
*Carbaminoyl-choline* ("Doryl"), action of, on the heart of a cladoceran ..... 1949 97 138
*Carbohydrate* and lipid metabolism (abstract) ..... 1951 101 203
consumption, aerobic, of some fresh water snails ..... 1950 98 266
influence on potassium content of leucocytes and muscle (abstract) ..... 1950 99 312
*Carbohydrate metabolism* in mammalian muscle (abstract) ..... 1950 99 312
intermediary, of Arbacia eggs and sperm (abstract) ..... 1941 81 289
of invertebrate tissues (abstract) ..... 1950 99 365
of the developing egg and embryo ..... 1953 104 1
oxidative pathway of, in Escherichia coli (abstract) ..... 1952 103 287
*Carbohydrate taste thresholds* and nutritive values in the blowfly .. 1950 99 446
*Carbon dioxide* effect on oxygen combining power of whole and hemolyzed blood, in Tautoga onitis ..... 1943 84 207
incorporation of, in organic linkage, by retina (abstract) ..... 1948 95 248
*Carbonic anhydrase* and growth, in Ostrea and Busycon ..... 1950 98 19
and calcification, in Uca (abstract) ..... 1951 101 236
in molluscs ..... 1948 94 55
role in the catalysis of ionic exchanges by bicarbonates (abstract) ..... 1941 81 294

*Carbon monoxide,* cytochrome oxidase reaction with (abstract)... 1950 99 317
methylene blue and potassium cyanide as indicators for study of oxidation-reduction potentials..... 1943 84 164
*Cardiac nerves,* action of electrical stimulation and of certain drugs upon..... 1947 93 72
*Cardiac pharmacology* of a cladoceran..... 1949 97 138
*Cardiographic studies* on the fish heart (abstract)..... 1947 93 208
*Cardio-inhibition* and acceleration in ganglion of Panulirus..... 1953 104 156
*Carnitine,* studies on the distribution of..... 1953 104 359
*Carotenes* of diatoms, dinoflagellates, brown algae and sea anemones 1944 86 169
*Carp,* fibrinogen solubility in plasma-ethanol mixtures..... 1951 101 171
*Cartesian diver* technique; a simplified mixing method in a new type of Cartesian diver vessel (abstract)..... 1948 95 253
respirometer..... 1950 98 139
*Case against correlation* between flicker and metabolism of red cells (abstract)..... 1951 101 212
*Catalase activity* as affected by ultraviolet light on Chlorella pyrenoidosa (abstract)..... 1949 97 222
*Catalysis* of ionic exchanges by bicarbonates (abstract)..... 1941 81 294
*Catfish,* freezing point of urine..... 1942 83 363
melanophores, responses to ergotamine..... 1941 81 163
role of hypophysis in melanogenesis..... 1941 81 352
*Cation-permeable* erythrocytes, preparation and properties (abstract)..... 1947 93 223
*Cations,* bivalent, in activation of Arbacia and Cumingia eggs..... 1941 81 261
*Cattle,* digestion of cellulose by protozoa in rumen of..... 1943 84 157
*Caudal bands* in Fundulus, effect of temperature on rate of disappearance..... 1944 86 154
*Cecropia silkworm,* brain and pro-thoracic glands as an endocrine system in..... 1952 103 120
significance of the prothoracic glands in embryonic and post-embryonic development..... 1948 94 60
*Cell differentiation* in algae..... 1951 101 300
*Cell division* as affected by tissue extracts (abstract)..... 1950 99 340
as initiated by injury substances (abstract)..... 1949 97 241
changes in protoplasmic cortex during (abstract)..... 1950 99 341
in Colpoda steinii..... 1945 88 12
in relation to protoplasmic clotting (abstract)..... 1949 97 242
inhibition in Arbacia and Chaetopterus eggs and its reversal by Krebs cycle intermediates and certain phosphate compounds..... 1953 104 263
of Arbacia egg as affected by ultraviolet radiation (abstract).. 1949 97 232
oxygen consumption during..... 1952 102 185
respiration in egg of Psammechinus miliaris..... 1950 98 144
respiration in egg of Urechis caupo..... 1950 98 152
X-ray effects on mechanisms of (abstract)..... 1950 99 317
*Cell oxidation,* effects of CO and CN on (abstract)..... 1941 81 284
*Cell reaction* to implants of tantalum in frog tadpoles (abstract)... 1949 97 223
*Cell size* variations during development of slime mold..... 1953 104 297

*Cell surface,* behavior during cleavage:
VII. Division mechanism of cells with excentric nuclei..... 1947 93 139
VIII. Cleavage of medusan eggs..... 1947 93 163
significance of ribonucleic acid at the (abstract)..... 1949 97 263
*Cells,* beta, sulfhydryl metabolism and diabetic development (abstract)..... 1948 95 239
*Cells,* embryonic, effect of urea and its compounds on oxygen consumption in..... 1949 96 1
foam, of mouse lung; mitochondrial arrangement in..... 1949 96 173
larval epidermal of Drosophila; Golgi material in..... 1948 95 163
of body cavity fluid; lipid localization in (abstract)..... 1949 97 253
under microscopical observation at room temperature, a method for sub-cooling (abstract)..... 1947 93 226
*Cellular respiration,* fractionation by narcotics (abstract)..... 1941 81 282
*Cellulase* in protozoa of bovine rumen..... 1943 84 157
*Cellulose* digestion in Euplodinium neglectum..... 1942 83 303
*Cement gland* development in the crayfish..... 1952 103 242
*Central nervous organs,* chromatophorotropins in, of the crab, Hemigrapsus oregonensis..... 1949 96 238
*Central nervous system* of Limulus, localization of neurosecretory cells..... 1941 81 96
capillary bed of, in certain invertebrates..... 1944 87 52
*Centrifugation,* effect on oxygen consumption of Arbacia eggs (abstract)..... 1941 81 303
some effects of, on protoplasmic streaming in Elodea..... 1949 96 246
*Cercaria parvicaudata* (Stunkard and Shaw, 1931), observations on 1950 99 136
*Cerebrospinal fluid,* distribution of, in lower vertebrates (abstract). 1948 95 261
implications of distribution of, in healing therapy (abstract).. 1948 95 261
*Chaetognatha* of Florida West Coast..... 1951 100 206
*Chaetophoraceae,* new North American records for..... 1943 85 244
*Chaetopterus egg,* breakdown of the germinal vesicle (abstract)... 1950 99 363
cytological effects of low temperature on fertilized (abstract). 1949 97 258
inhibition of cell division in..... 1953 104 263
morphological effects of low temperature on fertilized (abstract)..... 1949 97 256
protoplasmic viscosity changes during mitosis..... 1948 95 57
sensitivity to ultraviolet light (abstract)..... 1950 99 359
study of maturation in (abstract)..... 1950 99 341
*Chaetopterus pergamentaceus,* stimulation of protoplasmic cortex.. 1952 103 139
treatment of gametes with metal-chelating agents..... 1953 104 224
*Chaetosphaeridiaceae,* new records for North America..... 1943 85 244
*Changes* in density, weight, chloride and swim bladder gas in the killifish (F. heteroclitus) in fresh and in sea water..... 1948 95 83
*Chaos chaos* (Linn.), or Pelomyxa carolinensis (Wilson)?..... 1945 88 139
oxygen consumption in single specimens of..... 1952 102 178
*Chaos nobilis* (Penard), in permanent culture (abstract)..... 1941 81 303
*Chara,* protoplasmic streaming and action potential (abstract)..... 1941 81 296
*Characeae* of the Woods Hole region, Massachusetts..... 1949 96 179

*Characteristics* of the retinal electrical response of the ocelli of Limulus ..... 1951 **101** 114
*Chelating agents* for metal in treatment of sea urchin gametes ..... 1953 **104** 224
*Chemical factors* influencing artificial activation of Nereis eggs ..... 1945 **89** 144
*Chemical induction* of bud formation in plant tissues (abstract) ..... 1949 **97** 268
*Chemical organization* of the cytoplasm (abstract) ..... 1944 **87** 156
*Chemical stimulation* and adaptation of tarsal receptors in the blowfly ..... 1952 **103** 178
*Chemicals,* effects of, on schooling fish ..... 1953 **104** 28
*Chemotropism* in Rhizopus nigricans:
I. The staling reaction (abstract) ..... 1951 **101** 199
II. The action of plant juices ..... 1953 **104** 100
*Chick embryos,* localizations of alkaline and acid phosphatases in .. 1944 **86** 51
nutritional requirements of ..... 1950 **99** 120
*Chief cells:* nuclear volumes; intranuclear proteins, and DNA in .. 1951 **101** 95
*Chilomonas paramecium,* ammonia utilization in (abstract) ..... 1941 **81** 285
*Chironomus* salivary gland chromosomes; micrurgical studies ..... 1946 **90** 71
wing-stroke and thoracic vibration ..... 1953 **104** 439
*Chlamydomonas,* genetics of (abstract) ..... 1949 **97** 243
studies on flagella of ..... 1952 **103** 74
*Chlorella pyrenoidosa,* as affected by ultraviolet light (abstract) ... 1949 **97** 222
*Chloride cell* changes in Anguilla rostrata ..... 1950 **99** 439
*Chloride cells* in the gill of Fundulus, phosphatase activity in (abstract) ..... 1947 **93** 224
*Chloride content* of frog muscle (abstract) ..... 1949 **97** 248
*Chloride excreting cell* and the pseudobranch of Fundulus (abstract) ..... 1947 **93** 222
*Chloride excretion* in the head region of Fundulus ..... 1950 **99** 381
*Chloride ion regulation* and oxygen consumption in the crab Ocypode albicans ..... 1951 **101** 259
*Chlorophyll preparations* from blue-green algae (abstract) ..... 1950 **99** 364
*Chloroplast reactions* (abstract) ..... 1950 **99** 327
*Chloroplasts,* effect of ultraviolet light on (abstract) ..... 1949 **97** 268
oxidations and reductions catalyzed by (abstract) ..... 1950 **99** 318
*Choline acetylase* and choline esterase content of some invertebrate tissues (abstract) ..... 1948 **95** 278
*Choleinate, sodium;* cortical response of sea urchin egg to ..... 1953 **104** 210
*Choline action* on heart of Venus mercenaria ..... 1948 **95** 346
*Cholinesterase* activity, effect of various suspension media upon .... 1953 **104** 323
from human plasma, interaction of inhibitors with (abstract) . 1948 **95** 275
specificity of (abstract) ..... 1948 **95** 241
*Cholinesterases:* Report of investigations, summer of 1948 ..... 1948 **95** 278
*Chorion* (Fundulus), osmotic behavior and anatomy of (abstract) . 1952 **103** 295
*Chortophaga viridifasciata,* effect of radiation on DNA and cell size in embryonic cells ..... 1951 **101** 138
effect of low intensity gamma rays on mitosis in neuroblasts of 1953 **104** 313
*Chromatin* in Arbacia egg ..... 1944 **86** 163
*Chromatin bridges* and irregularity of mitotic coordination in Peromatus notatus ..... 1941 **81** 149

*Chromatophores*, diurnal rhythm of, in Uca ... 1951 101 71
in salamanders ... 1951 100 127
mechanism of pigment displacement in ... 1944 87 252
of vertebrates, pituitary effects on ... 1950 99 487
studies on physiology of Uca red ... 1950 98 218
*Chromatophorotropic hormones* in crabs of genus Sesarma ... 1951 100 28
sources and activities of, in Sesarma ... 1951 101 241
*Chromatophorotropic principle* in central nervous system of Limulus ... 1941 81 80
*Chromatophorotropins* in the central nervous system of the crab Hemigrapsus oregonensis ... 1949 96 238
*Chromoproteins* in the tentacles of Physalia (abstract) ... 1947 93 204
*Chromosomal variations* in larvae of Triturus torosus ... 1950 99 386
*Chromosome cycle*, primitive, in coccid ... 1944 87 167
*Chromosome ends* in salivary gland nuclei of Drosophila ... 1945 88 144
*Chromosome movement*, hydrostatic pressure effects upon the spindle figure and ... 1946 91 145
*Chromosome number* of Triturus torosus (abstract) ... 1947 93 207
*Chromosomes*, anaphase movement of, in grasshopper spermatocytes ... 1949 96 90
and nucleoli in ovarian eggs of salamander: effect of X-rays on (abstract) ... 1947 93 206
in two species of bats (Chiroptera) ... 1948 94 275
the elimination of, in the meiotic divisions of Brachystethus rubromaculatus, Dallas ... 1946 90 19
*Chymotrypsin*, action on mating type substances of Paramecium calkinsi ... 1951 101 99
photochemical inactivation of (abstract) ... 1950 99 317
*Cilia*, in transport system of Asterias ... 1942 83 438
*Ciliary action* dependent on acetylcholinesterase activity (abstract) 1950 99 347
*Ciliary movement* coordination, in Modiolus gill (abstract) ... 1941 81 290
*Ciliates*, fibrillar system of ... 1953 104 408
from Phytia setifer ... 1945 89 95
marine sand-dwelling ... 1950 99 349 1951 100 59
of Strongylocentrotus dröbachiensis: incidence; distribution in the host; division ... 1948 94 99
of the family Ancistrocomidae (Chatton and Lwoff):
I ... 1946 90 1
II ... 1946 90 200
III ... 1946 91 189
IV ... 1946 91 200
thiamin synthesis by (abstract) ... 1941 81 285
thiamin synthesis in Glaucoma piriformis ... 1944 86 31
*Ciona*, conditions conducing to normal or abnormal development ... 1945 88 50
penetration of membrane by spermatozoa, in self-inseminated eggs ... 1942 82 455
*Ciona intestinalis*, relation between water transport and food requirements ... 1952 103 356
uptake of vanadium by ... 1951 101 84

*Cladoceran,* cardiac pharmacology of a ..... 1949 97 138
*Clam,* effects of X-ray irradiation on germ cells ..... 1953 104 197
reproductive cycle in ..... 1953 104 146
tissues; metabolism in sea water of different salinities (abstract) ..... 1948 95 265
Mactra solidissima, fertilizin from eggs of (abstract) ..... 1949 97 257
*Clava leptostyela,* regeneration in isolated and fused fragments of.. 1952 102 141
*Cleavage,* acceleration by hypotonic sea water (abstract) ..... 1941 81 288
acceleration by hypotonicity; further observations ..... 1943 84 244
block and viscosity changes in eggs of Ilyanassa (abstract)... 1952 103 297
effects of halogenated alkyl amines on ..... 1952 103 44
furrow, morphological effect of low temperature and hypotonicity ..... 1946 91 272
in Arbacia eggs; recovery from delay induced by ultraviolet light ..... 1949 97 244, 315
in fertilized ova, as affected by necrosin (abstract) ..... 1949 97 244
inhibition of, in Arbacia eggs (abstract) ..... 1949 97 234
inhibition by a series of substituted carbamates (abstract).... 1948 95 244
initiation, in frog eggs (abstract) ..... 1952 103 282
initiation, in marine eggs, by various agents ..... 1952 103 139
of eggs and metabolic activities, in Arbacia ..... 1950 98 175
of X-rayed Spisula eggs ..... 1953 104 197
modification of pattern, in lobeless Ilyanassa eggs (abstract).. 1951 101 218
rate, as affected by homotypic extracts ..... 1942 83 245
spiral (abstract) *see* Erratum, page 361 ..... 1948 95 265
synchrony in Arbacia embryos (abstract) ..... 1952 103 288
time, as affected by ultraviolet light (2537 Å), in centrifuged eggs (abstract) ..... 1949 97 241
*Click mechanism* of elaterid beetles (abstract) ..... 1944 87 165
*Clymenella torquata,* bud induced by implants ..... 1942 82 154
implants of young buds formed in anterior regeneration (abstract) ..... 1941 81 302
*Clypeaster japonicus* larvae, means of fixation of the blastomere positions in ..... 1952 102 58
*CN and CO,* effects on oxidations in living cells (abstract) ..... 1941 81 284
*Coagulation,* and bleeding in Bermudan crustaceans ..... 1952 103 395
of blood of arthropods ..... 1953 104 372
*Coccid chromosome cycle,* primitive ..... 1944 87 167
*Cochliophilus depressus* (gen. nov., spec. nov.) and C. minor (sp. nov.); holotrichous ciliates from the mantle cavity of Phytia setifer (Cooper) ..... 1945 89 95
*Cockroach,* structure of peritrophic membrane of ..... 1952 103 384
*Coelomic fluid* (cell-free), in Phascolosoma gouldii, effect of temperature on light absorption by (abstract) ..... 1947 93 202
of Thyone briareus (Lesueur) (abstract) ..... 1950 99 343
*Coelomic pressures* in Sipunculus nudus ..... 1950 98 161
*Colchicine,* disruption of mitosis in Colchicum by (abstract) ..... 1941 81 297
effect on melanophoral activity in excised frog skin (abstract) 1952 103 312
*Colchicinized mitotic figures* in onion root tip ..... 1951 100 107

*Colchicum* mitosis disrupted by colchicine (abstract) ..... 1941 81 297
*Cold*, effect of, on protoplasmic rigidity ..... 1952 103 139
stress, in relation to body temperatures ..... 1953 104 87
*Cold-induced anomalies* in Triturus torosus ..... 1950 98 1
*Colloidal changes* in sea urchin egg homogenates (abstract) ..... 1952 103 293
*Color changes* and pigmentary innervation in goby, wrasse and plaice ..... 1942 82 273
in Uca pugilator ..... 1953 104 115
*Coloration*, animal; methods of estimating the effects of melanophore changes upon ..... 1943 84 273
*Colpidium campylum*, adaptive utilization of sucrose (abstract) .... 1949 97 261
effects of acids on enzyme systems of (abstract) ..... 1949 97 246
lipids in ..... 1948 94 29
presence of the tricarboxylic acid cycle in ..... 1949 96 257
synthesis of lipids from proteins in (abstract) ..... 1947 93 214
*Colpidium colpoda*, photoreactivation in ..... 1952 103 336
*Colpoda steinii*, narcosis and cell division in ..... 1945 88 12
*Commensal hydroid* from California ..... 1950 99 74
from the mantle cavity of an oyster ..... 1951 101 162
*Commensalism studies* in the polynoid genus Arctonoë ..... 1950 98 81
in the genera Arctonoë and Halosydna ..... 1951 100 71
*Comparative effects* of fish and beef pituitary on water retention by frogs ..... 1952 102 25
*Comparative serology* of astacuran crustaceans ..... 1952 103 433
*Comparative study* of respiratory metabolism in excised brain tissue of marine teleosts ..... 1953 104 445
*Comparison* of frog nerve and squid axon; measurement of accommodation (abstract) ..... 1948 95 256
of the binding capacity of hemocyanin and serum albumin for organic ions ..... 1948 94 40
*Competence* of gastrula ectoderm in androgenetic frog hybrids .... 1953 104 68
*Composition* of the swim bladder gas in deep sea fishes ..... 1953 104 75
*Conalbumin*, preparation and properties (abstract) ..... 1950 99 323
*Concentration gradients*, development of Fucus eggs in ..... 1944 86 125
*Conditions* leading to normal or abnormal development, in Ciona .. 1945 88 50
*Conduction* in single nerve fibers (abstract) ..... 1950 99 320
effect of anti-cholinesterases upon (abstract) ..... 1948 95 241
*Conjugation*, abbreviated process, in Paramecium trichium ..... 1949 97 331
*Contractile vacuole*, activity of, in Tokophrya infusionum ..... 1951 100 49
adjustment to concentration, in fresh-water amoebae ..... 1946 90 158
*Contraction* of actomyosin and free-energy relations ..... 1949 96 140
nodes in adult frog skeletal muscle fibers (abstract) ..... 1949 97 226
*Control*, endocrine, of land crab metabolism ..... 1953 104 275
of cement gland development in crayfish ..... 1952 103 242
*Cooling* as a stimulus to smooth muscle (abstract) ..... 1951 101 202
*Copepod*, Acartia tonsa; vertical migration under controlled illumination ..... 1942 82 112
*Copper*, valence of, in hemocyanin (abstract) ..... 1951 101 239
*Copper and mercury;* comparative tolerance to, in fouling organisms 1947 93 56

*Corpus allatum,* function of, in muscoid Diptera..... 1943 84 127
*Correlation* between possession of a chitinous cuticle and sensitivity to DDT ..... 1946 90 97
*Cortex* in Chaetopterus egg, physical study of (abstract)..... 1951 101 213
protoplasmic, in relation to stimulation..... 1952 103 139
*Cortical granules,* behavior in methylated xanthine effects (abstract)..... 1951 101 207
*Cortical layer* of Arbacia egg, movement of (abstract)..... 1951 101 208
*Cortical response* in sea urchin egg, analysis of..... 1953 104 210, 216
*Cortisone* effects on Arbacia eggs (abstract)..... 1950 99 357
*Cow fibrinogen,* solubility in plasma-ethanol mixtures..... 1950 101 171
*Crab, blue,* (Callinectes sapidus Rathbun); effects of a parasite upon..... 1950 98 277
fungus parasitic upon the eggs of..... 1948 95 214
*Crab,* chloride ion regulation and oxygen consumption in..... 1951 101 259
chromatophorotropic hormones in..... 1951 101 241
effects of calcium on isolated muscle fibers of..... 1952 103 421
fiddler, daily rhythmicity studies..... 1951 101 71
fiddler, ovarian inhibition by sinus gland principle..... 1949 96 228
Hemigrapsus oregonensis, chromatophorotropins in the central nervous organs of..... 1949 96 238
nerve, electrical changes in relation to potassium movement (abstract)..... 1949 97 247
*Crabs, grapsoid;* role of sinus glands in retinal pigment migration.. 1948 95 169
*Crago septemspinosus;* response of distal retinal pigment to changes in illumination (abstract)..... 1952 103 307
*Crangon armatillus;* factors influencing molting..... 1941 81 215
*Crassostrea rhizophora,* with new commensal hydroid in the mantle cavity..... 1951 101 162
*Crassostrea virginica,* absorption and digestion of fat..... 1952 102 118
existence of physiologically different races in..... 1951 101 151
food and feeding of larvae..... 1953 104 334
measurement of rate of shell formation..... 1952 103 269
studies on shell formation in..... 1953 104 394, 398
temperature requirements for maturation of gonads..... 1952 103 80
*Crayfish,* control of cement gland development..... 1952 103 242
influence of sinus glands on gastrolith formation..... 1942 82 68
kidney, urine formation exhibited by secretion of inulin, xylose and dyes..... 1941 81 235
micturition in..... 1941 81 134
molting and sexual cycles..... 1948 95 229
nephric tubule, excretion of water by..... 1941 81 127
serological comparisons of..... 1952 103 433
toleration of lowered oxygen tension (abstract)..... 1947 93 190
*Crepidula plana,* conditions affecting development of the male phase in (abstract)..... 1947 93 194
new experiments on sexual instability in (abstract)..... 1948 95 255
nutrition and sexuality in protandric gastropods of..... 1948 94 158
temperature effects on growth and sexual changes (abstract).. 1949 97 239

*Crustaccan* bleeding and coagulation ..... 1952 **103** 395
blood sugar studies ..... 1949 **96** 218 1950 **99** 454
comparative serology and studies in hemocyanin correspondence 1949 **97** 273
ganglion activity ..... 1953 **104** 156
histogenesis and cyclic phenomena of sinus gland and X-organ. 1943 **85** 87
muscle, dual contraction of ..... 1942 **82** 207
nerve-muscle system ..... 1942 **83** 334
reaction to direct and diffuse light ..... 1943 **84** 98
serological systematics ..... 1950 **98** 122
*Crustaceans*, astacuran, serological comparisons of ..... 1952 **103** 433
brachyuran, neurosecretory system of ..... 1952 **103** 157
method for removal of sinus gland from eyestalks of ..... 1947 **93** 52
occurrence of a diabetogenic factor in eyestalks of ..... 1944 **86** 1
*Crustacyanin*, the blue carotenoid protein of lobster shell (abstract) 1948 **95** 249
*Crystallography*, native protein, and diffraction patterns (abstract) 1944 **87** 157
*Cucumaria miniata*, absorption spectrum of corpuscular red pigment ..... 1945 **88** 30
*Culture, permanent*, of Chaos nobilis, Penard (abstract) ..... 1941 **81** 303
*Cunner*, melanophore control in (abstract) ..... 1941 **81** 300
*Cupron*, treatment of sea urchin gametes with ..... 1953 **104** 224
*Current, voltage and resistance* characteristics of injured nerves (abstract) ..... 1944 **87** 158
*Curtisia foremanii;* sexual reproduction without cross-copulation in. 1952 **102** 1
*Cuticle, arthropod*, studies on ..... 1948 **94** 212 1952 **103** 201
*Cyanide*, and inhibition of cell division in Arbacia eggs ..... 1953 **104** 263
and azide, comparative effects on development of frog egg .... 1945 **89** 122
effect on development changes in viability in the squid embryo. 1948 **94** 45
effect on respiration of Paramecium caudatum and P. aurelia.. 1945 **89** 76
effect on respiration of Pelomyxa ..... 1944 **87** 138
in a luminous millipede ..... 1952 **102** 100
*Cyclical production* of ova in Lebistes ..... 1952 **102** 30
*Cyclol hypothesis* and the structure of insulin (abstract) ..... 1949 **97** 229
*Cyclopentane dicarboxylic acid* effects on enzyme systems in Colpidium campylum (abstract) ..... 1949 **97** 246
*Cymatogaster*, agglutination of erythrocytes by normal human sera ..... 1952 **103** 328
*Cynthia partita* larva, "eye-spot" and light responses (abstract) ... 1941 **81** 287
*Cypridina luciferase*, inactivation by heat (abstract) ..... 1949 **97** 256
*Cypridina luciferin*, effect of azide on (abstract) ..... 1941 **81** 283
nature of (abstract) ..... 1950 **99** 326
*Cypridina luciferin and luciferase*, experiments on luminescent reaction of (abstract) ..... 1947 **93** 204
*Cyprids;* background illumination and attachment of barnacle ..... 1945 **88** 44
*Cyprina islandica*, reproductive cycle in ..... 1953 **104** 146
*Cyst formation* in Aelosoma hemiprichi, Ehr ..... 1950 **99** 173
*Cysteine protection* against irradiation damage ..... 1953 **104** 197, 351
*Cytochemical staining* and measurement of proteins with bromphenol blue ..... 1953 **104** 57

*Cytochemical studies,* on male accessory glands of the Japanese beetle, Popillia japonica ..... 1950 99 49
on grasshopper embryonic nuclei ..... 1951 101 138
on rat cells ..... 1951 101 95
*Cytochemistry* of desoxyribonuclease (DN-ase) ..... 1952 103 319
*Cytochrome oxidase* content of squid axoplasm and other nervous tissues (abstract) ..... 1950 99 356
content of toadfish and rat kidney (abstract) ..... 1950 99 356
in squid nervous tissue ..... 1951 100 159
in toadfish islet tissue ..... 1950 99 361 1951 100 191
reaction with carbon monoxide (abstract) ..... 1950 99 317
(soluble), preparation of (abstract) ..... 1947 93 214
*Cytochrome system* in relation to diapause and development in Cecropia silkworm (abstract) ..... 1948 95 282
of heart and muscle preparations (abstract) ..... 1950 99 318
of starfish sperm (abstract) ..... 1951 101 216
*Cyto-embryological studies* of sea urchins:
I. Blastomeres ..... 1952 102 58
II. Blastula stage ..... 1952 102 74
*Cyto-embryology in sea urchins* (abstract) ..... 1951 101 237
*Cyto-fertilizin,* absence of, in Arbacia eggs (abstract) ..... 1951 101 218
*Cytological abnormalities* produced by experimental temperature shock ..... 1950 98 1
*Cytological effects* of low temperature on Chaetopterus eggs (abstract) ..... 1949 97 258
*Cytological investigations* of gut epithelium, Habrobracon haploids and diploids (abstract) ..... 1949 97 237
*Cytological studies* on Nymphaea (abstract) ..... 1949 97 257
on male reproductive glands of Japanese beetle ..... 1950 99 49
on mucus formation and secretion in Busycon ..... 1952 102 252
*Cytology* of anterior pituitary in the fowl ..... 1942 82 79
*Cytoplasm,* chemical organization of (abstract) ..... 1944 87 156
observations regarding, in living marine eggs ..... 1942 82 47
of centrifuged Arbacia egg ..... 1944 86 163
*Cytoplasmic component* action on jelly coat and membrane formation in Arbacia (abstract) ..... 1950 99 339
*Cytoplasmic granules,* osmotic properties ..... 1943 85 179
*Cytoplasmic injury,* induced by X-rays, in Habrobracon eggs ..... 1949 97 210
*Cyto-taxonomy* of mantids ..... 1951 100 178
*Cyto-toxin* from Blepharisma ..... 1949 97 145

## D

*Daily rhythmicity* of fiddler crab ..... 1951 101 71
*D-amino acid oxydase* in invertebrate tissues (abstract) ..... 1947 93 220
*Daphnia magna,* allometry in normal and regenerating antennal segments ..... 1941 81 119
analysis of population development at different temperatures ... 1943 85 116
cardiac pharmacology of ..... 1942 83 165

effect of acetylcholine, atropine and physostigmine..... 1941 81 105
events in the life span of..... 1942 83 260
*Dark period* significance in the photoperiodic response of male birds..... 1952 103 345
*DDT*, correlation between possession of a chitinous cuticle and sensitivity to..... 1946 90 97
loci of action in the cockroach..... 1946 91 247
locus of action in flies (Drosophila)..... 1946 90 148
mechanism of action, in insects (abstract)..... 1947 93 189
mechanism of synergistic action of DMC with, against resistant house flies..... 1953 104 426
*DEDTC*, treatment of sea urchin gametes with..... 1953 104 224
*Decomposition and regeneration* of nitrogenous organic matter in sea water..... 1941 81 63
*Deep sea fishes*, composition of swim bladder gas..... 1953 104 75
*Denaturation* of proteins, kinetics of (abstract)..... 1950 99 336, 337
*Dendraster excentricus*, gradient patterns in oöcytes and embryos of. 1953 104 12
*Deposition of calcium* in oyster shells..... 1953 104 398
*Dermestes vulpinus*, carnitine content of..... 1953 104 359
*Dero pristis inflata* (Molin), life history and affinities..... 1942 82 292
*Desmognathus;* histology of thyroid and pituitary, after thyroid inhibitor treatment..... 1953 104 250
*Desoxy-cortico-sterone* damage to fibroblasts (abstract)..... 1950 99 328
effects on Arbacia eggs (abstract)..... 1950 99 357
effects on mammalian red cells (abstract) ..... 1941 81 295
*Desoxy-pentose-nucleic acid* (abstract)..... 1950 99 336
*Desoxyribonuclease* (DN-ase), action on cell nuclei..... 1952 103 319
activity and distribution in development of Arbacia (abstract). 1948 95 250
activity in irradiated Tetrahymena..... 1953 104 351
in nuclear fusion and mitosis (abstract)..... 1949 97 223
*Desoxyribonucleases*, specificity of, and cytochemical application (abstract)..... 1949 97 267
*Desoxyribonucleic acid* (DNA), content of mantid nuclei..... 1951 100 178
fraction in cell nucleus (abstract)..... 1951 101 236
in Arbacia eggs, determined by isotope dilution..... 1952 103 294
in Arbacia nuclei (abstract)..... 1952 103 295
nuclear volumes and amount of intranuclear proteins in rat cells..... 1951 101 95
X-ray effect on, in grasshopper embryonic nuclei..... 1951 101 138
*Detergent action* of Nereis sperm extract (abstract)..... 1951 101 226
*Detergent activation* of Nereis eggs (abstract)..... 1950 99 362
*Detergents*, cortical response of sea urchin eggs to..... 1953 104 216
hemolytic action of anionic (abstract)..... 1949 97 227
*Determination* of protoplasmic pH, in amoebae and Arbacia..... 1944 86 98
*Deuterium*, incorporation into Arbacia egg proteins (abstract).... 1951 101 209
*Developing egg and embryo*, carbohydrate metabolism in..... 1953 104 1
*Developmental changes* in viability of squid embryos, after subjection to cyanide..... 1948 94 45

*Developmental history* of Amaroecium constellatum:
I. Early embryonic development ... 1945 88 126
II. Organogenesis of the larval action system ... 1946 91 66
III. Metamorphosis ... 1952 103 226
*Developmental potencies* of the early blastomeres of the egg in Saccoglossus kowalevskyi (abstract) ... 1949 97 237
*Developmental stages* of echinoderms, gradient patterns in ... 1953 104 12
*Development* as a function of brain and prothoracic gland regulation in Cecropia silkworm ... 1952 103 120
of cement gland in the crayfish ... 1952 103 242
of frog hybrids ... 1950 99 88 1953 104 68
of Luminodesmus sequoiae ... 1952 102 100
of marine fouling communities ... 1945 89 103
of Menidia-Fundulus hybrids (abstract) ... 1949 97 344
of slime molds; analysis of aggregations ... 1952 103 259, 446
of slime molds; variation of cell size during ... 1953 104 297
of the slime bacterium, Chondromyces crocatus (abstract) ... 1951 101 194
of spermatozoa in albino rats of 9 to 50 days (abstract) ... 1949 97 230
of Thoracophelia mucronata ... 1952 102 232
oxygen uptake during blastomere stages ... 1951 101 47
post-embryonic, of Hyalella ... 1944 86 6
rate of, in Rana catesbiana ... 1942 83 375
time-temperature relation of different stages ... 1941 81 432
*Diabetes*, alloxan-produced, in fish; insulin content of islet tissue (abstract) ... 1948 95 276
production of, in toadfish, with alloxan (abstract) ... 1947 93 219
development, relationship to sulfhydryl metabolism of beta cell (abstract) ... 1948 95 239
*Diadema antillarum* (Philippi), light sensitivity of (abstract) ... 1950 99 329
*Diapause* and development in Cecropia silkworm, relation to cytochrome system (abstract) ... 1948 95 282
*Diatom*, Hantzschia amphioxys, tidal rhythm in ... 1951 100 173
*Diatoms*, marine, iron assimilation by ... 1952 102 243
phosphate utilization by ... 1951 101 274
xanthophylls and carotenes of ... 1944 86 169
*Dictyosteliaceae*, analysis of aggregation stage in development of ... 1952 103 259
*Dictyostelium discoideum*, aggregative center formation by mixtures of wild and aggregate-less forms ... 1952 103 446
effect of salts and organic solutes on migration time ... 1952 102 273
growth and differentiation in (abstract) ... 1949 97 240
observations on polarity in ... 1950 99 143
variations in cell size during development of ... 1953 104 297
*Dicumarol*, new action concept of (abstract) ... 1948 95 277
*Diethyl-stilbestrol* in the production of eye mutations (abstract) ... 1948 95 258
*Differentiation* and growth of Dictyostelium discoideum (abstract) ... 1949 97 240
in certain plant cell lineages (abstract) ... 1947 93 215
independent, of sensory areas of the avian ear ... 1943 84 252
in the early chick embryo ... 1950 99 120
*Diffraction patterns* in native protein crystallography (abstract) ... 1944 87 157

*Digestion* and absorption of fat in lamellibranchs..... 1952 102 118
of cellulose by protozoa in rumen of cattle..... 1943 84 157
of cellulose in Eudiplodinium neglectum..... 1942 83 303
of fat in Pelomyxa..... 1942 83 320
*Dileptus binucleatus*, growth and cystment (abstract)..... 1950 99 348
*Dilution effect* in sea urchin sperm..... 1953 104 224
*Dilution medium* and the survival of spermatozoa in Arbacia punctulata:
I. Effect of the medium on fertilizing power..... 1945 89 162
II. Effect of the medium on respiration..... 1946 90 177
*Dimorphism*, sexual, in Gambusia..... 1942 83 389
*Dinitro-carvacrol* action on Arbacia and Mactra eggs (abstract).. 1950 99 335
*Dinitro-cresol-resistant* phosphorylating mechanism in Arbacia (abstract)..... 1950 101 219
*Dinitro-cresol*, effects on oxygen consumption and cell division in variously fertilized Arbacia eggs (abstract)..... 1947 93 196
*Dinitro-phenol* and inhibition of cell division in Arbacia eggs..... 1953 104 263
*Dinitro-thymol*, action on Arbacia and Mactra eggs (abstract).... 1950 99 335
*Dinoflagellates*, thecal morphology of (abstract)..... 1947 93 210
xanthophylls and carotenes of..... 1944 86 169
*Diploid* Habrobracon embryos, effect of X-rays on..... 1952 103 170
*Diptera*, flight motor of (abstract)..... 1950 99 346
mechanics of flight movements in..... 1952 102 200
muscoid, function of the corpus allatum..... 1943 84 127
thoracic movements and potentials in flight..... 1951 100 95
*Discocephalini* (Hemiptera), autosomal elimination and preferential segregation in the harlequin lobe of..... 1946 90 265
*Dispersal* of schooling fish, effects of chemicals on..... 1953 104 28
*Distal retinal pigment* and illumination relationship in Palaemonetes (abstract)..... 1951 101 228
*Distribution* of marine organisms in the Cape Cod area (abstract). 1947 93 193
of radio-active phosphorus ($P^{32}$) in Callinectes during the molting cycle (abstract)..... 1951 101 211
of radio-active phosphorus in eggs of Lytechinus pictus (abstract)..... 1948 95 263
of Sagitta elegans on Georges Bank according to hydrographical conditions..... 1943 85 201
of vitamin $B_1$..... 1953 104 359
*Diurnal rhythm* of chromatophores in Uca..... 1951 101 71
in mechanism of retinal pigment control (Palaemonetes) (abstract)..... 1951 101 231
*Diurnal rhythms* in fiddler crab..... 1953 104 115
*DMC*, synergistic action with DDT against resistant flies..... 1953 104 426
*DNA* (*see* desoxyribonucleic acid)
*Dodecyl ammonium chloride*, nature of hemolytic action of (abstract)..... 1951 101 200
*Dog*, distribution of elastic tissue in arterial pathway to carotid bodies (abstract)..... 1941 81 293
*Dog fibrinogen*, solubility in plasma-ethanol mixtures..... 1951 101 171

*Dogfish* erythrocytes, action of toxins on respiration and hemolysis. 1949 **97** 57
smooth, tooth succession in. 1948 **95** 100
smooth, urea excretion in (abstract). 1947 **93** 197
smooth, urea reabsorption by kidney of. 1948 **95** 253 1953 **104** 55
*Dominant lethality* and correlated chromosome effects in Habrobracon eggs, X-rayed in diplotene and late metaphase. 1945 **89** 61
induced by X-rays in sperm of the chalcidoid wasp, Nasonia brevicornis, Ashmead (abstract). 1948 **95** 257
*Dorsalization* of Triturus gastrula. 1950 **98** 98
*Doubtful* character of "break" excitation in skeletal muscle (abstract). 1948 **95** 256
*Drone fly*, effect of illuminance on lethal temperature in. 1951 **100** 90
effect of illuminance on reversal temperature in. 1951 **100** 84
*Drosophila*, a study of chromosome ends in salivary gland nuclei. 1945 **88** 144
developmental relations between genital ducts and gonads. 1946 **91** 288
effects of atmospheric pressure on flight. 1949 **97** 115
effects of temperature on wings of certain crossbreeds. 1945 **88** 247
factors influencing growth and metamorphosis of the salivary gland. 1943 **84** 13
flight sounds. 1950 **99** 300
gibberosa, preliminary histological study of insemination reaction in. 1950 **98** 25
Golgi material in larval epidermal cells of. 1948 **95** 163
hormones and tissue competence in development. 1943 **84** 34
induction of larval molts in. 1944 **86** 113
influence of genetic environment on reduction of bristles by the dichaete gene. 1948 **94** 208
influence of temperature on synapsis in hybrid salivary glands. 1952 **103** 67
nucleic acids as growth factors. 1947 **93** 213
physiological ageing in, and utilization of glycogen during flight. 1943 **84** 263
respiratory quotient in flight of. 1947 **93** 279
studies of the metabolism of normal and mutant imaginal discs of (abstract). 1947 **93** 228
use of diethyl-stilbestrol in production of eye mutations. 1948 **95** 258
utilization of sugars and other substances. 1948 **95** 114
viability and fertility in sub-zero temperatures. 1949 **97** 150
virilis, flight of. 1951 **100** 15
the problem of differences of offspring in reciprocal crosses. 1947 **93** 102
wing form and gene function in 9 genotypes of D. melanogaster 1942 **82** 215
*Drugs*, influence on crustacean nerve-muscle system. 1942 **83** 334
inhibiting growth and nucleic acid synthesis in Arbacia embryos (abstract). 1951 **101** 204
*Duality* in the electrical response of the lateral eye of Limulus polyphemus. 1950 **98** 258
*Dudresnaya crassa* (Howe). 1950 **99** 272
*d-Usnic acid* in activity of DN-ase in nuclear fusion and mitosis (abstract). 1949 **97** 223
*Dye elimination* in developing liver and kidney (abstract). 1952 **103** 289

*Dyes*, effect on response to light in Peranema trichophorum (abstract) ..... 1941 81 285
secretion of, and urine formation by crayfish kidney ..... 1941 81 235

## E

*Early stages* in the life history of the common marine shrimp, Penaeus setiferus (Linn.) ..... 1949 96 168
*Earthworm*, Eisenia foetida (Savigny 1826), regeneration in ..... 1949 96 129
posterior regeneration in ..... 1950 98 36
regeneration ..... 1950 99 425
*Ecdysis* in fiddler crab, analysis of ..... 1953 104 115
*Echinarachnius parma*, action of heparin on fertilization of eggs (abstract) ..... 1950 99 340
treatment of gametes with metal-chelating agents ..... 1953 104 224
*Echinochrome*, its absorption spectrum; $pK_1$ value; its concentration in eggs, amoebocytes and test of Arbacia punctulata (abstract) ..... 1949 97 231
*Echinoderm* hybrids, maternal inheritance (abstract) ..... 1941 81 288
oöcytes and embryos, gradient patterns in ..... 1953 104 12
phosphatases (abstract) ..... 1950 99 370
*Echinoderms*, Puerto Rican, ecological observations on ..... 1944 87 177
sperm entrance in ..... 1950 99 399
*Ecological aspects* of behavior of Bugula larvae ..... 1949 97 302
*Ecological* observations on Astropecten marginatus and Mellita lata 1944 87 177
significance of glycogen depletion in a nemertean ..... 1950 99 469
study of coastal plants on Cape Cod ..... 1952 103 296
*Ecology* of Luminodesmus ..... 1952 102 100
of Thoracophelia ..... 1952 102 232
*Ectochaete* (Huber) Wille, new species of ..... 1942 83 97
*Ectoderm* (gastrula) competence in androgenetic frog hybrids .... 1953 104 68
*Ectodermization* of Arbacia larva (abstract) ..... 1941 81 304
*Effect* of adrenal preparations on tumor growth ..... 1952 102 226
of cyanide on respiration in P. caudatum and P. aurelia ..... 1945 89 76
of cyanide and azide on development of frogs' eggs ..... 1945 89 122
of ingested radiophosphorus on egg production and embryo survival in Habrobracon ..... 1952 102 128
of nitrogen mustards on respiration and fertilization of sea urchin sperm and eggs ..... 1948 94 267
of parrot fish thyroid gland on metamorphosis in frog tadpoles. 1951 101 157
of salts and organic solutes on migration time of Dictyostelium 1952 102 273
of "stabilizing" and "unstabilizing" agents on the metabolic mechanism supporting the resting potential of nerve (abstract) ..... 1948 95 245
of stretch on action potentials in muscle (abstract) ..... 1951 101 194
of thyroid extract on respiratory metabolism in the rat ..... 1952 102 278
of urea and its compounds on oxygen consumption of both blocked and active embryonic cells ..... 1949 96 1

of various suspension media on the activity of cholinesterase from flies ..... 1953 104 323
of water currents upon attachment and growth of barnacles... 1946 90 51
of X-rays on DNA and on size of grasshopper embryonic nuclei ..... 1951 101 138
*Effects* of antithyroid on radioactive iodine uptake by frog thyroid ..... 1951 101 62
of calcium on isolated arthropod muscle fibers ..... 1952 103 421
of chemicals on the schooling fish, Kuhlia sandvicensis ..... 1953 104 28
of different halogenated alkyl amines on egg division in Arbacia ..... 1952 103 44
of electrolytes and sugars on erythrocytes of the turtle, Chelydra serpentina ..... 1949 96 9
of ethyl alcohol on growth and respiration in Pelomyxa ..... 1952 103 97
of fish and beef pituitary on water retention by frogs ..... 1952 102 25
of nerve section on the intercerebralis-cardiacum-allatum system of the insect ..... 1952 102 261
of peripheral factors on motor-neuron differentiation in the chick embryo (abstract) ..... 1944 87 153
of potassium cyanide, arsenite and ethyl urethane on respiration in Pelomyxa carolinensis ..... 1944 87 138
of pressure on the insemination reactions of Arbacia (abstract) 1948 95 251
of prolonged low intensity gamma rays on mitosis in the grasshopper neuroblast ..... 1953 104 313
of thiourea and phenylthiourea upon the development of Eleutherodactylis ricordii ..... 1948 94 1
of X-rays on nuclease activity and respiration of Tetrahymena. 1953 104 351
of X-rays on Spisula gametes ..... 1953 104 197
of X-rays upon haploid and diploid embryos of Habrobracon.. 1952 103 170
*Egg* (Arbacia), metabolism and cleavage ..... 1950 98 175
rate of breaking when centrifuged in altered sea water ..... 1943 85 141
(Asterias), nuclear and cytoplasmic interrelations in fertilization process ..... 1949 96 270
avian developing, hydrogen ion concentration in yolk and albumen ..... 1944 87 223
(Chaetopterus), protoplasmic viscosity changes during mitosis. 1948 95 57
division effects by halogenated alkyl amines ..... 1952 103 44
inclusions, electron microscopy of some (abstract) ..... 1952 103 294
membrane, study of, in Melanoplus differentialis (Thomas)... 1949 97 100
(Mytilus edulis), effects of sperm extracts on ..... 1950 98 128
parthenogenetic, of M. differentialis, development of tyrosinase in ..... 1943 85 157
production in Habrobracon, effect of ingested $P^{32}$ on ..... 1952 102 128
protoplasmic cortex of, in relation to stimulation ..... 1952 103 139
(Psammechinus miliaris), respiration during cell division ..... 1950 98 144
sea urchin, cortical response to stimulating reagents ..... 1953 104 210, 216
independence of level of post- and pre-fertilization respiration ..... 1949 96 117
osmotic properties of cytoplasmic granules in ..... 1943 85 179

surfaces, electron microscopy of (abstract) ..... 1952 103 293
(Urechis caupo), respiration and cell division in ..... 1950 98 152
water, reaction of acrosome to ..... 1952 103 54
*Eggs* (Arbacia and Chaetopterus), inhibition of cell division in ... 1953 104 263
(Arbacia), effect of ultraviolet radiation on cell division (abstract) ..... 1949 97 232
influence of glycolysis on potassium and sodium content (abstract) ..... 1949 97 260
inhibition of cleavage (abstract) ..... 1949 97 234
late development in centrifuged halves of ..... 1949 97 287
oxidative phosphorylation by a cell-free enzyme from unfertilized eggs (abstract) ..... 1949 97 242
phosphorylation in cell-free extracts (abstract) ..... 1949 97 234
proteolytic enzymes in cytoplasmic granule preparations of (abstract) ..... 1949 97 264
re-fertilization of fertilized ..... 1951 101 335
recovery from ultraviolet light-induced delay in cleavage ..... 1949 97 244, 315
rhythmic alterations in properties of (abstract) ..... 1949 97 233
stratification and deformation when centrifuged in caffeine solutions ..... 1949 96 70
ultraviolet light (2537 Å) effects on cleavage time (abstract) ..... 1949 97 241
uptake and loss of $K^{42}$ in (abstract) ..... 1949 97 251
(Axolotl), induction of triploidy and haploidy in ..... 1942 83 367
(blue crab) fungus infestation in Chesapeake Bay ..... 1948 95 214
(Chaetopterus), effects of low temperature on (abstract) 1949 97 256, 258
(clam, Mactra solidissima), fertilizin from (abstract) ..... 1949 97 257
(frog, Rana pipiens), radioactive sodium permeability and exchange in ..... 1949 96 205
irradiation of by X-rays ..... 1949 97 169
(Fundulus), significance of periblast in epiboly of (abstract) . 1949 97 249
surface gel layer behavior during epiboly (abstract) ..... 1949 97 250
(Habrobracon), incidence and origin of androgenetic males in X-rayed ..... 1948 95 354
cytoplasmic injury by X-rays ..... 1949 97 210
marine, action of toxins on respiration in ..... 1949 97 57
effect of redox dyes on development of (abstract) ..... 1949 97 255
(Nereis), chemical aspects of sensitization and activation reactions of ..... 1948 95 333
Feulgen-positive reaction of oil droplets in (abstract) ..... 1949 97 259
study with the polarization microscope (abstract) ..... 1949 97 258
(Nereis limbata), extrusion of jelly under electrical stimulus (abstract) ..... 1949 97 260
(Psammechinus), temperature coefficients of respiration ..... 1949 96 107
(Psammechinus and Asterias), respiration of fertilized and unfertilized ..... 1948 95 124
(Saccoglossus kowalevskyi), developmental potencies of blastomeres (abstract) ..... 1949 97 237

fertilization reaction in (abstract) ..... 1949 97 237
(sea urchin), accumulation of phosphate and synthesis of adenosine triphosphate (ATP) in, (abstract) ..... 1949 97 225
effects of hydrogen peroxide and irradiated sea water on respiration of ..... 1949 97 51
treatment with metal-chelating agents ..... 1953 104 224
(Strongylocentrotus purpuratus), uptake and loss of $K^{42}$ in (abstract) ..... 1949 97 251
*Eisenia foetida*, regeneration in ..... 1949 96 129 1950 98 36
*Elasmobranch*, erythrocytes of (abstract) ..... 1950 99 351
interrenal body of Alopias vulpinus (abstract) ..... 1941 81 299
kidney studies ..... 1953 104 45
musculature development of (abstract) ..... 1950 99 364
*Elaterid beetles*, click mechanism in (abstract) ..... 1944 87 165
*Electrical changes* in crab nerve as related to potassium movement (abstract) ..... 1949 97 247
*Electrical response* in lateral eye of Limulus ..... 1950 98 258
in Limulus ocelli ..... 1951 101 114
*Electrocardiogram* of Arenicola ..... 1950 98 254
of Venus mercenaria ..... 1952 102 48
*Electrographic* observations on seagulls (abstract) ..... 1949 97 243
*Electrolyte pump* in isolated surviving frog skin (abstract) ..... 1950 99 313
*Electrolytes*, effects on turtle erythrocytes ..... 1949 96 9
*Electron microscope observations* of the trichocysts and cilia of Paramecium ..... 1946 91 141
*Electron microscope studies*, of egg membranes of Melanoplus differentialis (Thomas) ..... 1949 97 100
of biological structures (abstract) ..... 1950 99 315
of mitosis in onion root tip ..... 1951 100 107
of sea urchin sperm ..... 1952 103 54
*Electron microscopy* of arthropod cuticle ..... 1952 103 201
of insect peritrophic membrane ..... 1952 103 384
of ciliate fibrillar systems ..... 1953 104 408
*Electro-physiological measurements* on the eyes of Limulus and Loligo (abstract) ..... 1949 97 265
*Eleutherodactylus ricordii*, effects of thiourea and of phenylthiourea upon development ..... 1948 94 1
*Elimination of chromosomes* in the meiotic division of Brachystethus rubromaculatus Dallas ..... 1946 90 19
*Elodea canadensis*, effects of centrifuging on protoplasmic streaming ..... 1949 96 246
increase of cortical calcium with age ..... 1942 82 385
*Elongation of hypocotyl* in the kidney bean (abstract) ..... 1950 99 329
*Embryo*, carbohydrate metabolism in grasshopper ..... 1953 104 1
nutritional requirements in chick ..... 1950 99 120
survival in Habrobracon, effect of ingested $P^{32}$ ..... 1952 102 128
*Embryogenesis*, chick, localizations of alkaline and acid phosphatases in ..... 1944 86 51
*Embryology* of Phoronopsis ..... 1953 104 182

*Embryonic cells*, effects of urea and its compounds on oxygen consumption in ..... 1949 96 1
reduction of TTC by, in grasshopper ..... 1952 102 16
*Embryonic development* in poeciliid fishes ..... 1945 88 233
*Embryonic growth* in the viviparous poeciliid, Heterandria formosa 1944 87 37
*Embryos* (Arbacia), effects of maleic hydrazide on growth ..... 1951 101 285
incorporation of $P^{32}$ into nuclear proteins and phosphoproteins of (abstract) ..... 1948 95 279
(chick), localizations of phosphatases in ..... 1944 86 51
(grasshopper), as affected by sulfanilamide ..... 1950 98 94
(Habrobracon), effects of X-rays on ..... 1952 103 170
(Mustelus canis), inter-myotome connections in early (abstract) ..... 1948 95 270
respiratory metabolism of ..... 1952 103 407
(Triturus), experimental temperature shock effects ..... 1950 98 1
*Emerita analoga* (Stimpson), pelagic larval stages of ..... 1942 83 67
*Encystment and excystment* in Bresslaua, respiration during ..... 1952 102 178
in Dileptus (abstract) ..... 1951 101 216
*Endocrine control* of metabolism in the land crab. I. Differences in the respiratory metabolism of sinus glandless and eyestalkless crabs ..... 1953 104 275
*Endocrine system*, brain and prothoracic gland functioning as, in the Cecropia silkworm ..... 1952 103 120
*Energy* requirements of sand dollar and sea urchin eggs (abstract) 1947 93 200
source of the nerve action potential (abstract) ..... 1944 87 158
transformation in nerve (abstract) ..... 1949 97 268
*Entamoeba muris, E. ranarum;* food habits of ..... 1941 81 324
*Environmental factors*, effect on sperm cycle in Triturus viridescens ..... 1942 83 111
*Environmental temperatures* and body temperatures of white footed mice ..... 1953 104 87
*Environment*, visual; effect on melanin content of fishes ..... 1943 84 195
*Enzymatic conversion* of ovalbumin to plakalbumin (abstract) ..... 1950 99 322
*Enzyme activity* and radiation-sensitivity of enzyme-substrate films (abstract) ..... 1948 95 283
*Enzyme content* of islet tissue of toadfish (abstract) ..... 1950 99 361
of squid (abstract) ..... 1950 99 356
of toadfish and rat kidneys (abstract) ..... 1950 99 356
*Enzyme localization* in the giant nerve fiber of the squid (abstract) ..... 1948 95 277
*Enzyme reduction* of Janus green (abstract) ..... 1950 99 321
of retinine to vitamin A (abstract) ..... 1949 97 221
*Enzyme system*, a cell-free particulate, from unfertilized Arbacia eggs; oxidative phosphorylation by (abstract) ..... 1949 97 242
from fertilized Arbacia eggs; oxidative phosphorylation by (abstract) ..... 1950 99 333
in Colpidium campylum, effects of acids on (abstract) ..... 1949 97 246
*Enzyme systems*, effect of sinus gland extract on (abstract) ..... 1947 93 198

*Enzyme*, tyrosinase, development of in parthenogenetic grasshopper egg ... 1943 85 157
*Enzymes*, action of on mating type substances in P. calkinsi ... 1951 101 99
digestive, in goldfish and bass ... 1951 100 244
in Tetrahymena, effects of X-rays on ... 1953 104 351
proteolytic, in eggs of Mactra (abstract) ... 1950 99 367
proteolytic, in cytoplasmic granule preparations of Arbacia eggs (abstract) ... 1949 97 264
of a ribose-forming pathway in early embryonic development of Chaetopterus (abstract) ... 1951 101 237
*Eosin* effect on metamorphosis of Bugula larva ... 1952 103 369
*Epiboly of the Fundulus egg;* behavior of surface gel layer (abstract) ... 1949 97 250
significance of the periblast in (abstract) ... 1949 97 249
*Epicytes*, alveolar, of mouse lung; mitochondrial arrangement in .. 1949 96 173
*Ergotamine*, responses of catfish melanophores to ... 1941 81 163
*Eristalis tenax*, effect of illuminance on lethal and reversal temperatures in ... 1951 100 84, 90
thoracic movements and potentials in flight of ... 1951 100 95
*Errata* ... 1949 97 345
*Erythrocyte* ionic exchanges and equilibria (abstract) ... 1950 99 311
permeability to physostigmine and acetylcholine (abstract) ... 1950 99 311
membrane (human), evidence of active transfer across (abstract) ... 1947 93 224
microchemical reactions of (abstract) ... 1951 101 201
*Erythrocytes*, agglutination of by viruses ... 1952 102 149
cation-permeable, preparation and properties of (abstract) ... 1947 93 223
dogfish, effect of bacterial toxins on permeability (abstract) .. 1948 95 255
fish, agglutination of by normal human sera ... 1952 103 328
isotonic solutions for (abstract) ... 1951 101 208
of dogfish, mackerel and tautog (abstract) ... 1950 99 338
of elasmobranchs (abstract) ... 1950 99 351
mammalian, effects of ultra-rapid freezing on (abstract) ... 1949 97 269
permeability at different temperatures (abstract) ... 1950 99 325
permeability and lipid content in experimental anaemia (abstract) ... 1941 81 277
potassium accumulation in (abstract) ... 1950 99 310
potassium permeability (abstract) ... 1950 99 311
reversible sphering of (abstract) ... 1948 95 268
turtle, effects of electrolytes and sugars on ... 1949 96 9
*Escherichia coli*, population dynamics in (abstract) ... 1950 99 331
*Esterases* in the grasshopper egg ... 1941 81 375
*Estrone*, action on nuclear volume ... 1950 99 112
*Ethanol*, solubilities of vertebrate fibrinogens in ... 1951 101 171
*Ethyl alcohol*, effects on growth and respiration in Pelomyxa ... 1952 103 97
*Euchlanis dilatata*, increase of cortical calcium with age ... 1942 82 392
*Eudiplodinium neglectum*, culture of; with experiments in cellulose digestion ... 1942 83 303
*Eudistylia gigantea*, absorption spectrum of the blood of ... 1945 88 30

*Euglena,* chlorophyll-less races of, streptomycin-induced (abstract) 1948 **95** 260
*Eugymnanthea ostrearum*, a new commensal hydroid in mantle cavity of oysters 1951 **101** 162
*Euherdmania*, vanadium content of 1951 **101** 84
*Euphausiacea,* relationship to the scattering layer 1950 **99** 181
*Eustrongylides,* influence of oxygen tension on the aerobic and post-anaerobic oxygen consumption of 1947 **92** 162
influence of temperature, pH and inorganic ions upon the oxygen consumption of 1943 **84** 148
physiological observations upon a larval form of 1942 **82** 1
*Evidence* of perpetual proximo-distal growth of nerve fibers (abstract) 1944 **87** 160
*Excretion,* physiology of, in Molgula 1948 **95** 307
*Excystation* of apostome ciliate and relation of this process to molting of host crustacean (abstract) 1952 **103** 295
*Excystment* in the ciliate Bursaria truncatella 1948 **94** 86
*Excystment and encystment* in Bresslaua, respiration during 1952 **102** 178
*Existence* of physiologically different races of oysters, Crassostrea virginica 1951 **101** 151
*Experimental studies* on the cytology of Allium cepa (abstract) 1944 **87** 163
*Experimental study* of the 'second factor' in artificial parthenogenesis in the frog egg (abstract) 1948 **94** 78
*Experiments* on chloroplasts and on photosynthesis (abstract) 1948 **95** 270
on the determination and differentiation of sex in the bopyrid, Stegophryxus hyptius (Thompson) 1949 **96** 17
*Explants,* amphibian gastrulae; anaerobic ammonia production by 1952 **102** 22
respiratory metabolism of 1952 **103** 407
*Extension mechanism* in spider legs 1944 **86** 41
*External development* of the banded dogfish, or pofadderhaai, Haploblepharus edwardsii (M. and H.) 1945 **88** 1
*External morphology* of the third and fourth zoeal stages of the blue crab, Callinectes sapidus Rathbun 1944 **87** 145
*Extra* post-zygote division in Paramecium caudatum (abstract) 1948 **95** 265
*Extra-polar* potential distribution in nerve; an experimental method (abstract) 1949 **97** 249
stimulus escape, to measure nerve membrane characteristics (abstract) 1949 **97** 246
*Extraction* of purified squid "visual purple" (abstract) 1948 **95** 242
*Extrusion* of jelly under electrical stimulus, by eggs of Nereis limbata (abstract) 1949 **97** 260
*Eye,* lateral, of Limulus, electrical response in 1950 **98** 258
*Eye-spot* and light responses of larva of Cynthia partita (abstract) 1941 **81** 287
*Eyes* of Limulus and Loligo, electrophysiological measurements on (abstract) 1949 **97** 265
*Eyestalk extirpation,* effect on respiratory metabolism of land crab. 1953 **104** 275
*Eyestalks* of crustaceans, diabetogenic factor in 1944 **86** 1
effects of removal of, on rate of development of the cement gland in crayfish 1952 **103** 242

## F

*Factors influencing* metamorphosis of Bugula larvae ..... 1952 **103** 369
molting and sexual cycles in the crayfish ..... 1948 **95** 229
*Fat cell size* in the mutant small wings of Habrobracon (abstract) 1948 **95** 264
*Fat digestion* and absorption in lamellibranchs ..... 1952 **102** 118
*Fatty acids* (lower), relative rate of penetration into beef red cells (abstract) ..... 1948 **95** 245
relative rate of penetration into erythrocytes of the smooth dogfish (abstract) ..... 1948 **95** 255
*Fauna*, bottom, in Menemsha Bight, a quantitative survey ..... 1944 **86** 83
distribution in two narrow arms of Buzzards Bay (abstract) .. 1949 **97** 250
*Faunistic survey* of the Nudibranchiata of New England (abstract) 1950 **99** 352
*Feather germs*, pigment deposition, in chick embryos (abstract) ... 1941 **81** 280
*Feather pigmentation*, melanophore control of (abstract) ..... 1944 **87** 153
*Fecundity* and X-ray mutations of Mormoniella (abstract) ..... 1949 **97** 344
*Feeding mechanisms* and nutrition in three species of Bresslaua .... 1941 **81** 221
*Ferritin* and iron metabolism (abstract) ..... 1944 **87** 155
*Fertility* of Drosophila exposed to sub-zero temperatures ..... 1949 **97** 150
*Fertilization* and development in Arbacia, caffeine effects ..... 1948 **94** 16
cross- and self-fertilization in certain Ascidians ..... 1942 **82** 161, 172
inhibition of, by blood extracts, in Arbacia ..... 1948 **95** 69
inhibitor in blood cells of Arbacia (abstract) ..... 1952 **103** 299
in Spirocodon saltatrix ..... 1950 **99** 412
intermediary carbohydrate metabolism, before and after, of Arbacia eggs and sperm (abstract) ..... 1941 **81** 289
membrane formation in response to stimulating agents, in sea urchin eggs ..... 1953 **104** 210
membrane of Arbacia egg, under the electron microscope ..... 1943 **85** 151
metabolism and, in starfish egg (abstract) ..... 1941 **81** 278
nuclear and cytoplasmic interrelations in, of starfish egg ..... 1949 **96** 270
of Phoronopsis ovum ..... 1953 **104** 182
of X-rayed Spisula eggs ..... 1953 **104** 197
reaction, improvement by treatment of sea urchin gametes with metal-chelating agents ..... 1953 **104** 224
reaction in the egg of Saccoglossus (Dolichoglossus) kowalevskyi (abstract) ..... 1949 **97** 237
role of antifertilizin in sea urchin eggs ..... 1941 **81** 364
role of fertilizin in sea urchin eggs ..... 1941 **81** 190
studies on a non-conjugating race of P. aurelia (abstract) .... 1947 **93** 210
*Fertilized* sea urchin eggs re-fertilized ..... 1951 **101** 335
*Fertilizin*, agglutination of dead sperm by (abstract) ..... 1951 **101** 202
chromatographic analysis of (abstract) ..... 1951 **101** 215
effects of irradiation on ..... 1942 **82** 446
from eggs of the clam, Mactra solidissima (abstract) ..... 1949 **97** 257
of Nereis limbata (abstract) ..... 1948 **95** 271
of sea urchins, mucin clot reaction with ..... 1949 **96** 74
role in fertilization of sea urchin eggs ..... 1941 **81** 190

*Feulgen-positive reaction* of the oil droplets in the Nereis egg (abstract) ... 1949 97 259
*Feulgen reaction* in grasshopper embryonic nuclei ... 1951 101 138
*Fever,* chemical basis of (abstract) ... 1944 87 163
*Fibrillar network* of insect peritrophic membranes ... 1952 103 384
*Fibrillar systems* of ciliates as revealed by the electron microscope. I. Paramecium ... 1953 104 408
*Fibrin* clots, structure of (abstract) ... 1949 97 227
*Fibrinogens,* vertebrate, solubilities in plasma-ethanol mixtures ... 1951 101 171
*Fibroblasts,* selective damage to (abstract) ... 1950 99 328
*Fiddler crab,* analysis of molting process ... 1953 104 115
studies of daily rhythmicity in ... 1951 101 71
*Filter feeding invertebrates,* relation between water transport and food requirements in ... 1952 103 356
*Filtration rate* of smooth dogfish kidney ... 1953 104 45
*Fine structure* of the peritrophic membranes of certain insects ... 1952 103 384
*Fish;* autolysis of muscle of highly active and less active ... 1942 83 129
cardiographic studies on (abstract) ... 1947 93 208
comparative study of lipids in (abstract) ... 1949 97 229
erythrocytes, agglutination by normal human sera ... 1952 103 328
erythrocytes, agglutination by viruses ... 1952 102 149
melanin content and visual environment ... 1943 84 195
pituitary, effects on water retention by frogs ... 1952 102 25
red blood cells of (abstract) ... 1948 95 266
reproduction, in Xiphophorus maculatus ... 1953 104 240
reproductive processes of Oryzias latipes ... 1943 84 115
respiratory metabolism in warm- and cold-adapted ... 1950 99 213
schooling, effects of chemicals on ... 1953 104 28
studies on isolated islet tissue of. I. Cytochrome oxidase and succinic dehydrogenase content of normal toadfish ... 1951 100 191
temperature acclimatization in goldfish ... 1950 99 416
*Fishes,* an improved method of assaying melanin content ... 1943 84 187
deep sea, composition of swimbladder gas ... 1953 104 75
nitrogen tension in swimbladder of ... 1951 101 178
warm and cool spring, respiratory metabolism in ... 1942 82 313
*Fission,* binary, in the sea cucumber ... 1942 83 55
*Fixation* and staining of plant nuclei in lacto-Sudan black b (abstract) ... 1948 95 253
*Flagella* of algae, studies on ... 1952 103 74
*Flagellate,* respiration of a ... 1942 82 356
*Flies,* cholinesterase from, activity as affected by various suspension media ... 1953 104 323
resistant; mechanism of synergistic action of DMC with DDT against ... 1953 104 426
*Flight,* atmospheric pressure effects on, in Drosophila ... 1949 97 115
mechanics of movements in Diptera ... 1952 102 200
motor of Diptera (abstract) ... 1950 99 346
movements of insect thorax during ... 1951 100 95

potential changes in thoracic movements during..... 1951 100 95
sounds of Drosophila..... 1950 99 300
*Flounder*, factors influencing pigmentation of regenerating scales on ventral surface (abstract)..... 1941 81 301
*Flounder*, summer, origin of artificially developed melanophores... 1941 81 341
*Food* and feeding of larvae of American oyster..... 1953 104 334
content effect on respiration in Pelomyxa..... 1944 86 146
habits of Entamoeba muris and E. ranarum..... 1941 81 324
requirements and water transport in filter-feeding marine invertebrates..... 1952 103 356
vacuole content in the Peritricha, hydrogen ion concentration.. 1944 87 188
*Forcipomyia*, wing stroke and thoracic vibration frequency..... 1953 104 439
*Foreleg*, indicator patterns in regeneration of, in Triturus..... 1951 101 121
*Form and growth* in the development of a Scyphomedusa..... 1949 96 283
*Formation* of insect peritrophic membranes..... 1952 103 384
of shell, studies on. I..... 1952 103 269
of shell, studies on. II & III..... 1953 104 394, 398
of mollusc shell..... 1952 102 9
*Fouling organisms*, comparative tolerances to copper and mercury of some..... 1947 93 56
*Free-energy* relations and contraction of actomyosin..... 1949 96 140
*Freezing*, ultra-rapid, effects on mammalian erythrocytes (abstract) 1949 97 269
*Freezing-point* of urine of fresh water fish..... 1942 83 363
*Fresh water Bryozoa*. XVI. Fredericella australiensis, var. browni, n. var..... 1945 89 215
*Fresh water snails*, oxygen consumption and oxygen tension in.... 1953 104 301
metabolism and carbohydrate consumption of. 1950 98 266 1951 100 199
*Frog*, contraction nodes in skeletal muscle fibers (abstract)..... 1949 97 226
eggs, effects of cyanide and azide in development of..... 1945 89 122
eggs, permeability in, to radioactive sodium (abstract)..... 1947 93 225
hybrids, development of..... 1950 99 88
hybrids, developmental studies of..... 1953 104 68
muscle, chloride content of (abstract)..... 1949 97 248
skin, electrolyte pump in (abstract)..... 1950 99 313
tadpoles, cell reaction to implants of tantalum (abstract)..... 1949 97 223
tadpoles, effect of parrot fish thyroid on metamorphosis..... 1951 101 157
thyroid, effects of antithyroid drugs on iodine uptake of..... 1951 101 62
vitamin A and lipid metabolism in the (abstract)..... 1947 93 211
*Frogs*, water retention by: effects of beef and fish pituitary..... 1952 102 25
*Fucus*, egg development in..... 1942 82 127
egg development in concentration gradients..... 1944 86 125
*Fundamental principles* in oxidation-reduction..... 1949 96 293
*Fundulus eggs*, behavior of surface gel layer during epiboly (abstract)..... 1949 97 250
direct determinations of internal hydrostatic pressure (abstract) 1947 93 190
early changes in phosphate content (abstract)..... 1943 84 226
significance of periblast in epiboly of (abstract)..... 1949 97 249
some physical constants of (abstract)..... 1950 99 337

*Fundulus heteroclitus*, alkaline phosphatase in the early development of (abstract) ..... 1947 93 211
changes in chloride, density, weight and swim bladder gas by exchange of medium from fresh to salt water ..... 1948 95 83
chloride excretion in head region of ..... 1950 99 381
cytological basis of salt excretion from gills of (abstract) .... 1947 93 192
effect of centrifugation and low temperature on development of (abstract) ..... 1952 103 309
effect of temperature on rate of disappearance of caudal bands in ..... 1944 86 154
neural tube extirpation in (abstract) ..... 1952 103 310
neuro-humoral evidence for double innervation of the xanthophores in ..... 1942 82 261
neuro-secretory material from (abstract) ..... 1950 99 371
phosphatase activity in the chloride cells of the gills (abstract) 1947 93 224
properties of surface coat in embryos (abstract) ..... 1948 95 271
some effects of androgens on ..... 1942 82 233
the interrelation of the chloride excreting cell (gill) and the pseudobranch of (abstract) ..... 1947 93 222
*Fundulus parvipinnis and Atherinops affinis;* experiments with .... 1945 88 194
*Fungus*, Lagenidium callinectes (Couch, 1942), on blue crab eggs in Chesapeake Bay ..... 1948 95 214
*Further chemical aspects* of the sensitization and activation reactions of Nereis eggs ..... 1948 95 333
*Further notes on turbellarian fauna* of the Atlantic coast of the U. S. ..... 1952 103 195

## G

*Galleria mellonella*, structure of peritrophic membrane ..... 1952 103 384
*Gambusia*, sexual dimorphism in pectoral fin of ..... 1942 83 389
*Gametes* of marine animals, irradiation of by X-rays ..... 1953 104 197
of sea urchin, treatment with metal-chelating agents ..... 1953 104 224
*Gametogenesis* in the oyster under depressed salinity conditions .... 1949 96 263
*Gamma rays*, low intensity; effect on mitosis in neuroblast of grasshopper ..... 1953 104 313
*Ganglion*, crustacean; activity in ..... 1953 104 156
*Garter snake*, relationship between paraphysis and paraventricular nucleus ..... 1951 101 106
*Gas, swimbladder* of fishes, an analytical method for ..... 1951 101 178
composition of, in deep sea fishes ..... 1953 104 75
*Gastric mucosa;* nuclear volumes; amounts of intranuclear proteins and of DNA in cells of ..... 1951 101 95
*Gastro-intestinal canal*, influence of theophylline on the absorption of magnesium salts from (abstract) ..... 1948 95 254
*Gastroliths*, formation of, in crayfish ..... 1942 82 68
*Gastrula ectoderm competence*, in androgenetic frog hybrids ..... 1953 104 68
*Gastrulae*, amphibian, respiratory metabolism of ..... 1952 103 407
explants, anaerobic ammonia production in ..... 1952 102 22

*Gecarcinus lateralis*, endocrine control of metabolism in..... 1953 104 275
neuro-secretory system of..... 1952 103 157
*Gelatin as a plasma substitute*, with special reference to pseudo-agglutination (abstract)..... 1944 87 162
*Genes*. Do they exist? (abstract)..... 1948 95 257
*Genetic block* to free oviposition in the chalcidoid wasp, Melittobia sp.-C (abstract)..... 1948 95 243
*Genetics* of Chlamydomonas—paving the way (abstract)..... 1949 97 243
*Genyonemus*, agglutination of erythrocytes of, by normal human sera..... 1952 103 328
*Geographical grouping* in Lymnea palustris..... 1942 82 26
*Georges Bank*, distribution and reproduction of Sagitta elegans, in relation to hydrographical conditions..... 1943 85 201
*Germ cell formation* in Tubularia crocea, with special reference to the germ plasma theory (abstract)..... 1947 93 198
*Germ cells* of clam, effect of X-rays on..... 1953 104 197
*Germinal localization* in Ilyanassa, experiments on (abstract)..... 1947 93 191
*Germinal tissue* in Neotoca bilineata..... 1943 84 87
*Germinal vesicle* breakdown in Chaetopterus eggs (abstract)..... 1950 99 363
*Geryon quinquedens*, serological analysis of systematic position of. 1951 100 44
*Giant nerve fiber* system in Lumbricus; oscillographic studies on (abstract)..... 1944 87 159
*Gills* of Fundulus; cytological basis of salt excretion from (abstract)..... 1947 93 192
*Girella nigricans*, resistance and acclimatization of, to experimental changes..... 1942 83 219
*Glands, prothoracic*, of insects..... 1949 97 111
of Leucophaea maderae (Orthoptera)..... 1948 95 186
*Glands, sinus*, of grapsoid crabs; role in retinal pigment migration. 1948 95 169
*Glands, sub-maxillary*, of mouse; biochemical and histochemical observations on sexual dimorphism of (abstract)..... 1948 95 243
*Glaucoma piriformis*, synthesis of thiamin by..... 1944 86 31
*Globular proteins*, recent results on structures of (abstract)..... 1952 103 313
*Glomerular filtration* in smooth dogfish kidney..... 1953 104 45
*Glucose metabolism* in marine annelids (abstract)..... 1949 97 246
*Glutathione* in body fluids of marine worms (abstract)..... 1951 101 225
*Glycerol*, depressant action on fly cholinesterase..... 1953 104 323
*Glycogen* body as derivative of avian neural tube (abstract)..... 1952 103 289
content of some invertebrate nerves (abstract)..... 1949 97 252
depletion during starvation in Microura leidyi (Verrill)..... 1950 99 469
utilization of by flies during flight..... 1943 84 263
*Glycolysis*, effects of Triturus toxin on..... 1942 83 137
influence on potassium and sodium content of yeast, Saccharomyces cerevisiae, and Arbacia egg (abstract)..... 1949 97 260
of scallop and thyone muscle, effect of sulfhydryl inhibitors on (abstract)..... 1947 93 194
*Glycolytic activity* in the swimbladder gland (abstract)..... 1952 103 317
*Glycolytic factor* influence on potassium and sodium content of the yeast cell (abstract)..... 1950 99 319

*Glycylglycine* and piperazine hydrochloride as non-toxic buffers in distilled and in sea water ... 1949 96 233
*Goby*, color change and pigmentary innervation ... 1942 82 273
*Goitrogens*, effects on histology of salamander thyroid and pituitary 1953 104 250
*Goldfish*, accumulation and distribution of radioactive materials in (abstract) ... 1947 93 225
influence of temperature on the asphyxiation of ... 1947 92 217
relation of temperature to oxygen consumption in ... 1948 94 66
studies of digestive tract and digestive enzymes of ... 1951 100 244
temperature acclimatization in ... 1950 99 416
*Golgi apparatus* in chicken gizzard epithelium; studied by means of quartz microscope ... 1945 89 157
*Golgi material* in larval epidermal cells of Drosophila ... 1948 95 163
*Gonadal changes*, seasonal, in oyster ... 1942 82 195
*Gonadal development, primary*, in Teredo navalis and other pelecypod molluscs ... 1943 84 178
*Gonads*, annual cycle in Phoronopsis ... 1953 104 182
oyster, temperature requirements for maturation ... 1952 103 80
*Gorgoderinae* (Trematoda), observations on the morphology, development and taxonomy of ... 1943 84 59
*Gradient* patterns in echinoderm oöcytes and embryos ... 1953 104 12
*Gradients* in regeneration of forelimb and tail in larvae of Triturus torosus ... 1951 101 121
respiratory, in Tubularia ... 1953 104 109
*Grafting*, homoplastic, in Stentor ... 1951 100 116
*Graphic method* of describing the growth of animals ... 1946 90 141
*Grasshopper egg*, esterases in ... 1941 81 375
parthenogenetic, development of tyrosinase in ... 1943 85 157
protyrosinase, effect on morphological integrity ... 1941 81 388
*Grasshopper*, effects of calcium on isolated muscle fibers ... 1952 103 421
embryo as affected by sulfanilamide ... 1950 98 94
embryo, carbohydrate metabolism in ... 1953 104 1
embryonic cells, reduction of T.T.C. by ... 1952 102 16
embryonic nuclei, effects of X-radiation on size and DNA in ... 1951 101 138
neuroblast during mitosis, protoplasmic viscosity changes in different regions of ... 1946 90 109
neuroblast, in mitosis, effects of low intensity gamma rays on ... 1953 104 313
structure of meiotic chromosomes in the ... 1945 89 242
*Griffithsia globulifera*, protoplasmic continuity in (abstract) ... 1950 99 350
*Growth*, action of saponins on ... 1951 100 1
and carbonic anhydrase in Ostrea and Busycon ... 1950 98 19
and cystment in Dileptus binucleatus (abstract) ... 1950 99 348
and differentiation in Dictyostelium discoideum (abstract) ... 1949 97 240
and metamorphosis of the Arbacia pluteus ... 1949 97 223, 287
and sexual changes in Crepidula plana (abstract) ... 1949 97 239
changes (post-embryonic) in Pentidotea resecata (Stimpson) ... 1948 95 107
effects of ethyl alcohol on, in Pelomyxa ... 1952 103 97
embryonic, in the viviparous poeciliid, Heterandria formosa ... 1944 87 37
maximal, of Tetrahymena, biochemical factors in ... 1944 87 107

normal, of Tetrahymena ..... 1942 82 423
of arms in the pluteus of Arbacia punctulata ..... 1950 98 34
of Nereis diversicolor ..... 1951 101 131
of oyster, during different months ..... 1949 97 82
of salivary gland in Drosophila, factors influencing ..... 1943 84 13
plant hormones, effect on respiration and ..... 1949 96 296
rate in oyster shells measured by use of $Ca^{45}$ ..... 1952 103 269
*Gryphaea virginica* (Ostrea virginica) and the oyster crab, Pinnotheres ostreum, parasitic upon it ..... 1945 88 269
*Gustatory rejection thresholds* for the larvae of the Cecropia moth, Samia cecropia (Linn.) ..... 1945 88 37
*Gut epithelium* in Habrobracon, cytological investigations (abstract) ..... 1949 97 237

## H

*Habrobracon*, a strongly intersexual female in ..... 1946 91 243
cytological investigations of gut epithelium (abstract) ..... 1949 97 237
dominant lethality and correlated chromosome effects in eggs X-rayed in diplotene and in late metaphase I ..... 1945 89 61
effect of ingested $P^{32}$ on egg production and embryo survival .. 1952 102 128
eggs; X-rays and cytoplasmic injury to ..... 1949 97 210
embryos, effects of X-rays on haploid and diploid ..... 1952 103 170
fat-cell size in the mutant small wings of (abstract) ..... 1948 95 264
incidence and origin of androgenetic males in X-rayed eggs ... 1948 95 354
intersexuality and intersexual females in ..... 1943 85 238
larvae, staining procedures for whole mounts of the spinning glands of (abstract) ..... 1950 99 358
method of origin of androgenetic males in (abstract) ..... 1948 95 259
sex linkage of stubby (sb) in (abstract) ..... 1941 81 298
starvation studies with ..... 1950 99 65, 359
*Haemal vessels* of Stichopus, pharmacology of ..... 1952 102 249
*Halogenated alkyl amines*, effects on division of sea urchin eggs ... 1952 103 44
*Halosydna*, studies in the physiology of commensalism in ..... 1951 100 71
*Hantzschia amphioxys*, tidal rhythm in ..... 1951 100 173
*Haploblepharus edwardsii*, external development of ..... 1945 88 1
*Haploid embryos* (Habrobracon), effects of X-rays on ..... 1952 103 170
*Haploidy*, experimental, in salamander larvae ..... 1941 81 402
induction of, in axolotl eggs ..... 1942 83 367
*Heart*, action of acetylcholine on isolated heart of Venus mercenaria ..... 1943 85 79
action of choline and related compounds on ..... 1948 95 346
metabolism, of clam (abstract) ..... 1941 81 289
muscle, mammalian, partial separation of cytochromes of (abstract) ..... 1948 95 239
*Hearts*, analysis of action of acetylcholine on ..... 1942 83 145
myogenic and neurogenic, comparative pharmacology of (abstract) ..... 1941 81 292
*Heat-activated* Nereis egg, cytology of (abstract) ..... 1951 101 224

*Heat*, cytological effects on Nereis eggs (abstract) ..... 1951 **101** 225
effect of, on protoplasmic rigidity ..... 1952 **103** 139
death in Phascolosoma (abstract) ..... 1951 **101** 206
inactivation of Cypridina luciferase (abstract) ..... 1949 **97** 256
produced by respiring whole blood of Tautoga and Mustelus (abstract) ..... 1941 **81** 305
regulation in some arctic and tropical mammals and birds ..... 1950 **99** 237
sensitivity of protozoa; use of the most probable number method for determination of ..... 1952 **103** 364
stress in relation to body temperatures ..... 1953 **104** 87
*Heliocidaris crassispina*, studies on blastula stage ..... 1952 **102** 74
*Heliosoma duryi*, oxygen consumption and oxygen tension in ..... 1953 **104** 301
*Hemicentrotus pulcherrimus*, cortical response of eggs to stimulating agents ..... 1953 **104** 210, 216
*Hemocyanin* and hemerythrin complexes with small ions (abstract) ..... 1948 **95** 275
*Hemoglobin-oxygen* equilibrium in whole and hemolyzed blood of Tautoga ..... 1941 **81** 307
*Hemoglobin-saline* solutions, recent experiments with (abstract) .. 1944 **87** 161
*Hemolymph* (insect), reactions to coagulation inhibitors of vertebrate blood ..... 1953 **104** 372
*Hemolysis*, an unknown type of (abstract) ..... 1949 **97** 243
and the potassium content of red cells (abstract) ..... 1951 **101** 200
of dogfish erythrocytes, action of toxins on ..... 1949 **97** 57
of sheep erythrocytes by organic mercury compounds (abstract) 1951 **101** 204
osmotic, specific differences within the genus Peromyscus ..... 1943 **85** 52
*Hemolytic action* of sodium taurocholate (abstract) ..... 1947 **93** 202
of urea and sodium salicylate (abstract) ..... 1947 **93** 198
*Hemolytic effect* of anionic detergents (abstract) ..... 1949 **97** 227
of silver, nature of (abstract) ..... 1948 **95** 268
of sodium dodecyl sulfate (abstract) ..... 1948 **95** 269
*Hemorrhage*, peripheral circulatory changes during shock from (abstract) ..... 1944 **87** 161
*Heparin*, action on marine eggs (abstract) ..... 1950 **99** 340, 341
preparations, action on cells and tissues (abstract) ..... 1952 **103** 281
*Heterandria formosa*, viviparous poeciliid; embryonic growth ..... 1944 **87** 37
*Hetero-agglutinins* in body fluids and seminal fluids of various invertebrates ..... 1946 **90** 213
in lobster blood ..... 1945 **89** 193
*Hetero-chromatin* in certain plant nuclei (abstract) ..... 1949 **97** 236
*Heterocineta phoronopsidis*, sp. nov.; a ciliate from the tentacles of Phoronopsis viridis (Hilton) ..... 1945 **89** 180
*Heterokaryosis* in Neurospora crassa (abstract) ..... 1950 **99** 331
*Heteroploidy* in a group of Pentatomidae (Hemiptera) ..... 1945 **88** 63
in Triturus torusus ..... 1950 **99** 386
*Hippuric acid* excretion in anxiety states (abstract) ..... 1948 **95** 246
*Histochemistry* of shell formation in molluscs ..... 1952 **102** 9
*Histogenesis* and cyclic phenomena of the sinus gland and X-organ in crustaceans ..... 1943 **85** 87

*Histological study* of Syndisyrinx franciscanus, an endoparasitic rhabdocoel of the sea urchin ..... 1946 91 295
of the insemination reaction in Drosophila gibberosa ..... 1950 98 25
*Histology* of incretory elements in Sesarma ..... 1951 101 241
of the corpora allata of Melanoplus differentialis (Orthoptera: Saltatoria) ..... 1948 94 194
of thyroid and pituitary of salamanders, treated with thyroid inhibitors ..... 1953 104 250
*Holothuria parvula* (Selenka), regeneration of reproductive system 1942 83 55
*Holotrichous ciliates* from the mantle cavity of Phytia setifer (Cooper) ..... 1945 89 95
*Homarus americanus,* effects of calcium on isolated muscle fibers.. 1952 103 421
*Homology patterns* in Neurospora crassa (abstract) ..... 1950 99 332
*Homoplastic grafting* in Stentor ..... 1951 100 116
*Honeybees,* antennal cuticle of ..... 1952 103 201
*Hopkinsia rosacea,* studies on ..... 1949 97 206
*Hopkinsiaxanthin,* a xanthophyll of the sea slug, H. rosacea ..... 1949 97 206
*Hormonal regulation* of the distal retinal pigment of Palaemonetes. 1952 102 212
*Hormone action* on nuclear volume ..... 1950 99 112
*Hormone* from crustacean eyestalk, effect on melanophore activity in excised frog skin (abstract) ..... 1952 103 312
*Hormones,* androgenic, in Gambusia; induction of male character in female by ..... 1942 83 389
and tissue competence in development of Drosophila ..... 1943 84 34
chromatophorotropic, in crabs ..... 1951 101 241
chromatophorotropic, in Sesarma ..... 1951 100 28
chromatophorotropic, comparative distribution of two, in crustacean nervous systems ..... 1946 91 170
controlling the distal retinal pigment of Palaemonetes vulgaris (abstract) ..... 1951 101 217
crustacean, effect of extirpation of sinus gland and eyestalk on. 1953 104 275
in Cecropia silkworm ..... 1952 103 120
influence on differentiation of melanophores in birds (abstract) 1941 81 281
*Host relations* and specificity in Zoögonus ..... 1941 81 205
*House flies,* resistant, mechanism of synergistic action of DMC with DDT against ..... 1953 104 426
respiratory metabolism during metamorphosis ..... 1951 100 229
*Hyalella azteca* (Saussure), post-embryonic development study... 1944 86 6
thermal death of ..... 1949 96 123
*Hyaline layer,* role in fixation of position of blastomeres in sea urchin larvae ..... 1952 102 58
accumulation of fluid under, in sea urchin eggs ..... 1952 102 74
*Hyaluronidase* action on mating type substances of P. calkinsi.... 1951 101 99
*Hybrid* Drosophila, influence of temperature on synapsis in salivary glands ..... 1952 103 67
*Hybridization* and seasonal segregation in two races of a butterfly. 1943 85 44
of Xiphophorus ..... 1953 104 240
*Hybrids,* androgenetic frog, competence of gastrula ectoderm ..... 1953 104 68

*Hydra*, regulation of spontaneous structure anomalies in..... 1952 103 104
reproductive potential in Pelmatohydra oligactis..... 1950 99 285
*Hydractinia*, development of basal mat in (abstract)..... 1948 95 260
mechanism for synchronous spawning..... 1942 82 329
*Hydranth formation* in Tubularia..... 1950 99 361
pigmentation at the site of..... 1952 102 91
*Hydrogen ion concentration* and certain buffer systems, effects upon the luminescent reaction of Cypridina luciferin and luciferase (abstract)..... 1947 93 204
of albumen and yolk of developing avian egg..... 1944 87 223
in the cultivation and growth of eight species of Paramecium (abstract)..... 1948 95 272
*Hydrogen ions*, facilitation of passage across Fundulus chorion by chlorides of calcium, potassium and sodium (abstract)..... 1952 103 291
and oxygen relations influencing Tubularian regeneration..... 1942 82 340
*Hydrogen peroxide* effects on respiration of sea urchin eggs and sperm..... 1949 97 51
*Hydrogenase* systems of green and blue-green algae (abstract)..... 1949 97 261
*Hydroid*, a new gymnoblastic (Aselomaris michaeli), life cycle of. 1948 95 289
commensal, in mantle cavity of an oyster..... 1951 101 162
commensal, from California..... 1950 99 74
Stylactis, a new form of (abstract)..... 1947 93 206
*Hydrostatic pressure* and swimbladder content, in Amblopites..... 1942 82 138
of Fundulus egg (abstract)..... 1951 101 206, 210
*Hydroxamic acids*, iron binding by (abstract)..... 1948 95 282
*Hymenoptera*, thoracic movements and potentials in flight..... 1951 100 95
*Hyperglycemia* (experimental) and normal values in Libinia emarginata..... 1949 96 218
and regulatory mechanisms in crustaceans..... 1950 99 454
*Hypersensitization* of catfish melanophores to adrenalin by denervation (abstract)..... 1941 81 302
*Hypertonic solutions*, effects of on Nereis eggs (abstract)..... 1948 95 269
osmotic hemolysis in (abstract)..... 1948 95 246
*Hypobranchial gland* of Busycon, presence of lactose in (abstract) 1952 103 296
*Hypobranchial mucus* of Busycon, fibrous ultra-structure in (abstract)..... 1952 103 306
*Hypophysis* of the broad-billed swordfish..... 1942 82 401
role in melanogenesis in the catfish..... 1941 81 352
*Hypothalamo-hypophyseal* system of vertebrates, compared to the intercerebralis-cardiacum-allatum system of the insects..... 1944 87 242
*Hypotonic sea water*, acceleration of cleavage in eggs of Arbacia by 1943 84 244

## I

*Illuminance*, effect on lethal and on reversal temperature, in Eristalis tenax..... 1951 100 84, 90
*Illumination* and vertical migration of copepod Acartia tonsa..... 1942 82 112
*Ilyanassa*, germinal localization experiments (abstract)..... 1947 93 191
*Imaginal discs*, normal and mutant, of Drosophila (abstract)..... 1947 93 228

*Immunity* to infection by heterophyid trematodes (abstract)..... 1941 **81** 279
*Implants* of young buds in regeneration of Clymenella (abstract).. 1941 **81** 302
*Improvement* of fertilization reaction by metal-chelating agents.... 1953 **104** 224
*Inactivation* of Cypridina luciferase by heat (abstract)..... 1949 **97** 256
*Incidence* and origin of androgenetic males in X-rayed eggs..... 1948 **95** 354
*Incorporation* of carbon dioxide into organic linkage by retina..... 1948 **95** 248
*Incretory elements* in Sesarma, histology of..... 1951 **101** 241
*Independence* of post-fertilization respiration level from that before fertilization..... 1949 **96** 117
*India ink,* injected intracardially into Ostrea virginica..... 1950 **98** 227
*Indicator patterns* in regeneration in Triturus torosus..... 1951 **101** 121
*Indicator gradient patterns* in oöcytes and early stages of echinoderm development..... 1953 **104** 12
*Indophenol reaction* in regenerating Triturus larvae..... 1951 **101** 121
in echinoderm oöcytes and embryos..... 1953 **104** 12
*Induction* of autogamy in single animals of P. calkinsi (abstract). 1948 **95** 265
of larval nodes in Drosophila..... 1944 **86** 113
*Influence* of direct current on ion distribution in dog nerve (abstract)..... 1951 **101** 198
of genetic environment on reduction of bristles by dichaete gene in Drosophila..... 1948 **94** 208
of surface texture and composition on attachment of sedentary marine organisms..... 1946 **91** 57
of temperature on synapsis in hybrid salivary glands..... 1952 **103** 67
*Ingestion* capacity of Habrobracon (abstract)..... 1951 **101** 222
*Inheritance,* maternal, in echinoderm hybrids (abstract)..... 1941 **81** 288
*Inhibition* of cell division in Arbacia and Chaetopterus eggs..... 1953 **104** 263
of cleavage in Arbacia eggs by nitro- and halo-phenols (abstract)..... 1949 **97** 234
of cleavage in sea urchin egg by substituted carbamates (abstract)..... 1948 **95** 244
of development of Arbacia eggs by ammonium chloride (abstract)..... 1948 **95** 267
of fertilization in Arbacia by blood extracts..... 1948 **95** 69
of nucleases in X-rayed Tetrahymena..... 1953 **104** 351
of phosphorylation in cell-free egg extracts by nitro- and halophenols (abstract)..... 1949 **97** 234
mechanical and chemical, in Amblystoma..... 1943 **85** 103
*Inhibitor* effects on early chick embryo..... 1950 **99** 120
effects on mitotic phases in Arbacia (abstract)..... 1950 **99** 362
influence on egg cells of Mactra (abstract)..... 1950 **99** 363
*Inhibitors,* coagulation, insect hemolymph reactions to..... 1953 **104** 372
thyroid, effects on histology of salamander thyroid and pituitary 1953 **104** 250
*Innervation,* double, of xanthophores in killifish (Fundulus)..... 1942 **82** 261
*Inorganic ions,* influence upon the oxygen consumption of a larval Eustrongylides..... 1943 **84** 148
*Insect diapause,* physiology of. Series I to IV (*See* Physiology)
brain and prothoracic glands as an endocrine system in..... 1952 **103** 120
*Insect glands,* prothoracic, in retrospect and in prospect..... 1949 **97** 111

*Insect hemolymph*, reaction to coagulation inhibitors of vertebrate blood ... 1953 **104** 372
*Insect species*, systematic serology among ... 1947 **93** 64
*Insects*, intercerebralis-cardiacum-allatum system, effects of nerve section on ... 1952 **102** 261
movements of thorax and potential changes in thoracic muscles during flight ... 1951 **100** 95
structure of peritrophic membranes ... 1952 **103** 384
*Insemination* reaction study on Drosophila gibberosa ... 1950 **98** 25
self-, in Ciona and Styela ... 1942 **82** 455
*Insulation* in mammals and birds ... 1950 **99** 225, 237, 259
*Insulin* content of the islet tissues of alloxan-diabetic fish (abstract) ... 1948 **95** 276
effects on potassium content of leucocytes and muscle (abstract) ... 1950 **99** 312
structure and the cyclol hypothesis (abstract) ... 1949 **97** 229
*Intake and deposition* of $Ca^{45}$ and $P^{32}$ in relation to shell formation in molluscs ... 1952 **102** 9
*Interaction* between the implanted embryos and the internal organs of an adult teleost, Opsanus tau (abstract) ... 1947 **93** 193
*Intercerebralis-cardiacum-allatum system* in the insect ... 1952 **102** 261
further studies on (abstract) ... 1952 **103** 284
*Intermediate*, photosynthetic (abstract) ... 1948 **95** 284
*Inter-myotome* connections in early embryos of Mustelus (abstract) 1948 **95** 270
*Internal hydrostatic pressure* of Fundulus egg (abstract) ... 1947 **93** 190
*Interphasic growth* of the nucleus ... 1949 **97** 187
*Interrenal body* of Alopias vulpinus (abstract) ... 1941 **81** 299
*Intersexual females* and intersexuality in Habrobracon ... 1943 **85** 238
*Intervarietal* mating reactions in Paramecium caudatum (abstract) 1949 **97** 239
*Intestine*, action of acetylcholine, atropine and physostigmine on Daphnia magna ... 1941 **81** 105
*Intracardial injections* of india ink into Ostrea virginica ... 1950 **98** 227
*Intracellular alkaline phosphatases* ... 1946 **90** 220
*Intracellular oxidation* of indicators in echinoderm oöcytes and embryos ... 1953 **104** 12
*Intranuclear proteins*, nuclear volumes and DNA in rat cells ... 1951 **101** 95
*Inulin* secretion; its bearing on urine formation by crayfish kidney. 1941 **81** 235
*Invertebrate* nerve glycogen content (abstract) ... 1949 **97** 252
phosphatases (marine phyla) (abstract) ... 149 **97** 262
photo-receptors (abstract) ... 1950 **99** 342
tissues, nucleo-proteins from (abstract) ... 1947 **93** 220
*Invertebrates*, capillary bed of central nervous system ... 1944 **87** 52
determination of amino acids in (abstract) ... 1949 **97** 263
filter-feeding marine, water transport and food needs ... 1952 **103** 356
marine, nucleo-protein studies (abstract) ... 1948 **95** 280
serological relationships between Mollusca and other ... 1944 **87** 96
*In vitro studies* on shell formation, method for ... 1953 **104** 394
*Iodine, radioactive*, effects of anti-thyroid drugs on uptake ... 1951 **101** 62
uptake by Ascophyllum ... 1951 **100** 188

*Iodine studies* in Ascophyllum, using radioactive iodine (abstract). 1951 101 239
using $I^{131}$ ..... 1951 101 62, 239
uptake and respiration in Ascophyllum ..... 1953 104 138
*Iodoacetate effect* prevention by photosynthesis, on the sodium and potassium balance in Ulva (abstract) ..... 1952 103 308
*Ion effects* on echinoderm phosphatases (abstract) ..... 1950 99 370
on electrical changes in single axons (abstract) ..... 1950 99 345
*Ion permeability* of the giant axon of the squid (abstract) ..... 1948 95 242
*Ionic balance* required by some marine micro-organisms (abstract) 1950 99 328
*Ionic exchanges and equilibria* of the erythrocyte (abstract) ..... 1950 99 311
*Ions, inorganic,* influence upon oxygen consumption of a larval Eustrongylides ..... 1943 84 148
*Ions, intake and loss* by living cells ..... 1943 84 213, 226
*Ions, phosphate* effects on Arbacia and Asterias eggs, larvae ..... 1943 84 213
*Ions, sodium,* effects on Arbacia and Asterias eggs, larvae ..... 1943 84 213
*Ions, small,* complexes of hemocyanin and hemerythrin with (abstract) ..... 1948 95 275
*Iron assimilation* by marine diatoms ..... 1952 102 243
*Iron binding* by siderophilin; conalbumin; hydroxylamine; aspergillic acid and related hydroxamic acids (abstract) ..... 1948 95 282
*Iron content* in marine invertebrates (abstract) ..... 1947 93 209
*Iron metabolism* and ferritin (abstract) ..... 1944 87 155
*Irradiation* effect on DNA and on size of embryonic nuclei ..... 1951 101 138
effects, resistance to, in Sciara ..... 1949 97 311
recovery from induced delay in cleavage of Arbacia egg ..... 1949 97 315
with low intensity gamma rays, effects on mitosis ..... 1953 104 313
with visible light as a method of recovery from delay in cleavage due to ultraviolet light (abstract) ..... 1949 97 244
*Islet tissue,* glutathione content of (abstract) ..... 1948 95 276
in fish, studies on. I. Cytochrome oxidase and succinic dehydrogenase in the toadfish ..... 1951 100 191
*Isolated blastomeres,* oxygen uptake of ..... 1951 101 47
*Isotonic solutions* for erythrocytes of dogfish, mackerel and tautog (abstract) ..... 1950 99 338
*Isotopes* in predation experiments with Paramecium ..... 1952 103 190
*Isotopic derivative technique* to determine the order of the amino acids in silk (abstract) ..... 1948 95 240

## J

*Janus green B,* effects on cleavage and protoplasmic viscosity (abstract) ..... 1950 99 353
reduction by isolated enzyme systems (abstract) ..... 1950 99 321
reduction by liver cell constituents (abstract) ..... 1950 99 322
*Japanese beetle* reproductive glands ..... 1950 99 49
*Jelly* of Nereis eggs, behavior of (abstract) ..... 1951 101 226
*Juncos,* significance of dark period in photoperiodic response of males ..... 1952 103 345

## K

*Karyometric-statistical method* as used for nuclear volume studies. 1950 99 112
*Kidney*, elasmobranch; studies on..... 1953 104 45
*Kidneys* of marine teleosts, phosphatase activity in..... 1950 99 152
*Killifish* (Fundulus), double innervation of xanthophores..... 1942 82 261
*Kinetochore movements*, and bivalent structure in the meiosis of male mantids..... 1943 85 265
*Krebs cycle* intermediates in reversal of cell division inhibition.... 1953 104 263
*Kuhlia sandvicensis*, effects of chemicals on schooling of..... 1953 104 28
$K^{42}$ uptake and loss in eggs of Arbacia and Strongylocentrotus (abstract)..... 1949 97 251

## L

*Labile P* in nucleic acids (abstract)..... 1949 97 224
*Lactic acid*, effect on oxygen-combining power of whole and hemolyzed blood of tautog..... 1943 84 207
*Lacto-Sudan black* for fixation and staining of plant nuclei (abstract)..... 1948 95 253
*Lactones* as mitotic poisons, tested on sea urchin eggs (abstract).. 1948 95 252
*Lagenidium callinectes* (Couch), a fungus on blue crab eggs..... 1948 95 214
*Lalor Fellowship Research*, report on..... 1947 93 218
report on..... 1948 95 273
report on..... 1949 97 263
report on..... 1950 99 369
report on..... 1951 101 236
*Lamellibranchs*, absorption and digestion of fat in..... 1952 102 118
*Lamp brush chromosomes*, staining with mercuric brom-phenol blue 1953 104 57
*Land crab*, endocrine control of metabolism in..... 1953 104 275
*Larvae*, amphibian, photorecovery of (abstract)..... 1950 99 330
of Bugula, factors influencing metamorphosis..... 1952 103 369
of oyster, food and feeding..... 1953 104 334
of Tenebrio molitor, nutritive requirements..... 1942 83 428
of Triturus torosus, indicator patterns in regeneration..... 1951 101 121
*Larval development* and ecology of Thoracophelia mucronata..... 1952 102 232
*Larval epidermal cells* (Drosophila), Golgi material in..... 1948 95 163
*Larval stages*, pelagic, of the sand crabs..... 1942 83 67
*Latitude*, water propulsion rate in Mytilus as a function of..... 1953 104 171
*Leander serratus*, control of retinal pigment migration in..... 1950 98 66
*Lebistes reticulatus*, reproduction of..... 1952 102 30
*Lecithinase* action on mating type substances in P. calkinsi..... 1951 101 99
*Lepidopa myops* (Stimpson), pelagic larval stages of..... 1942 83 67
*Lepidoptera*, brain and prothoracic glands as an endocrine system.. 1952 103 120
*Leptosynapta*, swimming of..... 1946 90 93
*Lethal temperature* and illuminance effect, in Eristalis..... 1951 100 90
*Leucocytes* of Arbacia punctulata..... 1950 98 46
of dogfish, potassium and sodium content (abstract)..... 1952 103 303
potassium content and effect of glucose (abstract)..... 1950 99 312

*Leucophaea maderae* (Orthoptera), effects of nerve section..... 1952 102 261
prothoracic glands of..... 1948 95 186
*Libinia emarginata,* experimental hyperglycemia in..... 1949 96 218
*Life cycle* of Aselomaris michaeli, a new gymnoblastic hydroid.... 1948 95 289
*Life history* of Tisbe furcata, a marine harpacticoid copepod (Baird)..... 1948 95 320
of Microphallus limuli..... 1951 101 307
of Peltogaster paguri..... 1942 83 401
of the oyster crab, Pinnotheres ostreum..... 1947 93 250
of Zoögonoides laevis, Linton; a digenetic trematode..... 1943 85 227
*Life span* of sea urchin sperm, prolongation of..... 1953 104 224
*Light,* effect on development of crayfish cement glands..... 1952 103 242
influence of intensity and temperature on chromatophores of Palaemonetes (abstract)..... 1952 103 310
influence upon the attachment of barnacles and other sedentary organisms..... 1942 82 14
period of quiescence in the response by amoeba to..... 1947 93 45
reaction of certain crustacea to direct and diffuse..... 1943 84 98
response, effects of dyes upon, in Peranema trichophorum (abstract)..... 1941 81 285
responses of larva of Cynthia partita (abstract)..... 1941 81 287
*Lillie Memorial Addresses*..... 1948 95 151
*Limpet,* luminescence observations..... 1950 99 373
*Limulus polyphemus,* characteristics of electrical activity in the lateral optic pathway (abstract)..... 1949 97 265
characteristics of retinal electrical response in ocelli..... 1951 101 114
chromatophorotropic principle in central nervous system..... 1941 81 80
electrical response in lateral eye of..... 1950 98 258
electro-physiological measurements on the eyes of (abstract).. 1949 97 265
heart, "spot" beats of (abstract)..... 1950 99 358
localization of neurosecretory cells in central nervous system.. 1941 81 96
*Lipid content* of erythrocytes in experimental anemia (abstract).. 1941 81 277
*Lipid localization* in cells of body cavity fluid, in Arenicola and Amphitrite (abstract)..... 1949 97 253
*Lipid material,* non-saponifiable, in marine animals (abstract)..... 1952 103 315
*Lipid metabolism* in the frog (abstract)..... 1947 93 211
in the Protozoa (abstract)..... 1947 93 228
*Lipids* in Colpidium campylum..... 1948 94 29
in fish (abstract)..... 1949 97 229
in some marine annelids..... 1947 93 99
in the northern pike (abstract)..... 1951 101 197
*Lipo-protein complexes* in Arbacia egg (abstract)..... 1941 81 296
*Lithium chloride,* effects on fertilized eggs of Nereis limbata..... 1946 90 188
effects on fertilized eggs of Molgula manhattensis (abstract).. 1949 97 236
*Littorina irrorata* (Say), behavior of nurse cells in..... 1942 82 461
*Liver cell* reduction of Janus green (abstract)..... 1950 99 322
*Liver cells* of rat, DNA in..... 1951 101 95
*Lobster,* Bermuda spiny, ganglion activity..... 1953 104 156
*Lobster shell,* blue carotenoid-protein of (crustacyanin) (abstract) 1948 95 249

*Localization* of vanadium in ascidians ..... 1951 101 84
*Locus of action* of DDT in flies (Drosophila) ..... 1946 90 148
*Locusta migratoria,* structure of peritrophic membrane ..... 1952 103 384
*Loligo pealii,* cytochrome oxidase and succinic dehydrogenase content in nervous tissue ..... 1951 100 159
electro-physiological measurements on the eyes of (abstract) . 1949 97 265
*Longevity* in Laminaria, effect of forced aeration (abstract) ..... 1951 101 224
*Luciferin* (of Cypridina), combining weight of (abstract) ..... 1948 95 263
nature of (abstract) ..... 1950 99 326
status of chemistry of (abstract) ..... 1951 101 195
*Lucilia,* thoracic movements and potentials in flight of ..... 1951 100 95
*Lumbricus,* giant nerve fiber system in (abstract) ..... 1944 87 159
*Luminescence* in Mnemiopsis (abstract) ..... 1941 81 296
of the "railroad worm" and other luminous organisms (abstract) ..... 1949 97 257
*Luminescent* fresh water limpet, observations on ..... 1950 99 373
reaction in Phryxothrix (abstract) ..... 1950 99 360
*Luminodesmus sequoiae,* biology of ..... 1952 102 100
*Luminous millipede,* biology of ..... 1952 102 100
*Lunar cycle* and reproduction in Atlantic palolo (abstract) ..... 1941 81 278
*Lymnea palustris,* effects of population density upon ..... 1942 83 283
geographical differentiation of ..... 1942 82 26
*Lymnea stagnalis appressa* (Say), functioning of alimentary system ..... 1946 91 88
oxygen consumption and oxygen tension in ..... 1953 104 301
*Lysozyme* action on mating type substances in P. calkinsi ..... 1951 101 99
*Lytechinus variegatus,* effects of halogenated alkyl amines on egg division ..... 1952 103 44
*Lytechinus pictus,* treatment of gametes with metal-chelating agents 1953 104 224
*Lytic effects* of sperm extracts on eggs of Mytilus edulis ..... 1950 98 128

## M

*Mactra* (*Spisula*) *solidissima,* egg cell studies in (abstract) ..... 1941 81 303
eggs, proteolytic enzymes in (abstract) ..... 1950 99 367
eggs, inhibitor influence on (abstract) ..... 1950 99 363
eggs, fertilizin from (abstract) ..... 1949 97 257
eggs, respiration and cell division of (abstract) ..... 1950 99 334, 335
gametes, effects of X-rays on ..... 1953 104 197
(*See* further items cited under Clam; Spisula)
*Magnesium,* effect on oxygen uptake of grasshopper embryo ..... 1953 104 1
*Magnesium ion,* effect on Bugula larval metamorphosis ..... 1952 103 369
*Magnesium salts,* influence of theophylline on absorption from the gastro-intestinal canal (abstract) ..... 1948 95 254
*Maleic hydrazide* effect on amphibian embryos and larvae ..... 1951 101 285
*Malonate* and inhibition of division in Arbacia eggs ..... 1953 104 263
*Mammalian erythrocytes,* effects of ultrarapid freezing on ..... 1949 97 269
*Mammalian tissues,* vitamin $B_1$ content of ..... 1953 104 359
*Manganese accumulation* and sexual cycle in the oyster (abstract) . 1941 81 278

*Mantids,* nuclear DNA content as a cyto-taxonomic character.... 1951 100 178
male; polarization, kinetochore movements and bivalent structure in the meiosis of..... 1943 85 265
*Mantle cavity* of oyster, new commensal hydroid of..... 1951 101 162
*Mantle-shell preparation* for shell-formation study, in vitro.. 1953 104 394, 398
*Mantle tissue* of oyster, calcium turnover in..... 1953 104 398
*Marine Biological Laboratory,* Woods Hole, Mass.
annual report for 1940..... 1941 81 1
annual report for 1941..... 1942 83 1
annual report for 1942..... 1943 85 1
annual report for 1943..... 1944 87 1
annual report for 1944..... 1945 89 1
annual report for 1945..... 1946 91 1
annual report for 1946..... 1947 93 1
annual report for 1947..... 1948 95 1
annual report for 1948..... 1949 97 1
annual report for 1949..... 1950 99 1
annual report for 1950..... 1951 101 1
annual report for 1951..... 1952 103 1
annual report for 1952..... 1953 105 1
*Marine Biological Laboratory Library*
list of serial publications held jointly for the Laboratory and the Woods Hole Oceanographic Institution:
Volume 84, in a special supplement issued February, 1943
interim list of additional titles..... 1944 86 81
..... ..... 1945 88 105
..... ..... 1946 90 88
..... ..... 1947 92 92
complete list of serials to date of issue,
Volume 102, in a special supplement issued February, 1952
*Marine Bryozoa,* associated with algae, of the Woods Hole region. 1949 96 32
studies on, *see* Studies series
*Marine ciliates,* sand-dwelling..... 1951 100 59
*Marine diatoms,* iron assimilation by..... 1952 102 243
*Marine eggs,* action of heparin on (abstract)..... 1950 99 341
observations on nucleolus and cytoplasm of..... 1942 82 47
*Marine filter-feeding invertebrates,* transport and food needs..... 1952 103 356
*Marine fishes,* nitrogen tension in swim-bladder of..... 1951 101 178
acclimatization of and resistance to experimental changes..... 1942 83 219
*Marine fouling communities,* development of..... 1945 89 103
*Marine gametes,* irradiation with X-rays..... 1953 104 197
*Marine invertebrate phosphatases* (abstract)..... 1949 97 262
*Marine micro-organisms,* ionic balance of (abstract)..... 1950 99 328
*Marine ova, electro-kinetic studies* of:
V. Effect of pH changes on surface potentials..... 1947 93 259
VI. Effect of salts on the zeta potential..... 1947 93 267
VII. Relation of the zeta potential to the adhesiveness of the cell membrane..... 1947 93 274
*Marine sand-dwelling ciliates*..... 1951 100 59

*Marine teleosts*, respiratory metabolism of excised brain tissue.... 1953 **104** 445
*Mass and time*, significance of, in regeneration rates..... 1944 **87** 227
*Mating* behavior in Chlamydomonas moewusii..... 1952 **103** 74
reactions between living and lyophilized Paramecia of opposite mating types (abstract)..... 1949 **97** 245
in Paramecium caudatum (abstract)..... 1949 **97** 239
types and conjugation of four different races of P. calkinsi and effect of X-rays on mating reaction (abstract)..... 1948 **95** 271
types in Tetrahymena (abstract)..... 1952 **103** 301
variety No. 4, Paramecium aurelia..... 1943 **85** 36
*Mating-type substances*, action of enzymes on..... 1951 **101** 99
*Maturation* of ovum in Phoronopsis..... 1953 **104** 182
of oyster gonads, temperature requirements for..... 1952 **103** 80
*Measurement* of calcium deposition and turnover in shell and mantle tissue of oysters..... 1953 **104** 398
of protein with mercuric bromphenol blue..... 1953 **104** 57
of rate of shell formation by use of $Ca^{45}$..... 1952 **103** 269
*Mechanics of flight movements* in Diptera..... 1952 **102** 200
*Mechanism* of accumulation (abstract)..... 1950 **99** 308
of action of acetylcholine on the Venus heart..... 1952 **102** 48
of interaction of inhibitors with human plasma cholinesterase (abstract)..... 1948 **95** 275
of pigment displacement in unicellular chromatophores..... 1944 **87** 252
of synergistic action of DMC with DDT against resistant house flies..... 1953 **104** 426
*Medusan eggs*, cleavage of..... 1947 **93** 163
*Meiosis*; polarization, kinetochore movements and bivalent structure in (male mantids)..... 1943 **85** 265
*Meiotic chromosomes*, in grasshopper..... 1945 **89** 242
*Meiotic divisions* of Brachystethus rubromaculatus; elimination of chromosomes in..... 1946 **90** 19
*Melanin*, assay of..... 1943 **84** 187
effects of visual environment upon content of, in fish..... 1943 **84** 195
*Melanogenesis*, role of the hypophysis in..... 1941 **81** 352
*Melanophore* changes, methods of estimating the effects of, on animal coloration..... 1943 **84** 273
control, of cunner (abstract)..... 1941 **81** 300
control of sexual dimorphism of feather pigmentation in the Barred Plymouth Rock fowl (abstract)..... 1944 **87** 153
hormone in pituitary gland of chick, development and distribution of (abstract)..... 1941 **81** 281
influence of hormones on differentiation, in birds (abstract)... 1941 **81** 281
system, organization of, in bony fishes (abstract)..... 1941 **81** 280
*Melanophores* of catfish, hyper-sensitization to adrenalin by denervation (abstract)..... 1941 **81** 302
of summer flounder, origin of artificially developed..... 1941 **81** 341
*Melanoplus differentialis*, carbohydrate metabolism in embryos of.. 1953 **104** 1
development of tyrosinase in parthenogenetic egg of..... 1943 **85** 157
egg membrane study with electron microscope..... 1949 **97** 100

endogenous oxygen uptake ..... 1951 100 153
histology of the corpora allata of ..... 1948 94 194
reduction of T.T.C. by embryonic cells ..... 1952 102 16
*Mellita lata*, ecological observations ..... 1944 87 177
*Membranes*, cell, resistance to internal pressures (abstract) ..... 1947 93 227
egg, of Saccoglossus, nature of (abstract) ..... 1951 101 221
peritrophic, fine structure of ..... 1952 103 384
*Menemsha Bight*, a quantitative survey of the bottom fauna ..... 1944 86 83
*Menidia-Fundulus* hybrids, development of (abstract) ..... 1949 97 344
*Mercuric bromphenol blue*, for staining and measuring protein .... 1953 104 57
*Mercury compounds and thiols*, reactions between; polarographic investigations (abstract) ..... 1951 101 196
*Mesoderm* in lobeless Ilyanassa eggs (abstract) ..... 1951 101 218
*Mespilia globulus*, fixation of blastomere positions in larvae, means for ..... 1952 102 58
study of blastula stage ..... 1952 102 74
*Metabolic activities* of Arbacia punctulata ..... 1950 98 175
*Metabolic poison effects* on loss of potassium from red cells of rabbit (abstract) ..... 1950 99 325
*Metabolic rates* and body temperatures of bats ..... 1951 101 289
*Metabolism*, anaerobic, of some fresh water snails. 1950 98 266 1951 100 199
and fertilization in starfish egg (abstract) ..... 1941 81 278
carbohydrate, of developing egg and embryo ..... 1953 104 1
carbohydrate (intermediary), of eggs and sperm, before and after fertilization, in Arbacia (abstract) ..... 1941 81 289
endocrine control of, in land crab ..... 1953 104 275
glucose, in marine annelids (abstract) ..... 1949 97 246
of alpha-glyceryl ethers in marine animals (abstract) ..... 1951 101 238
of amphibian gastrula explants ..... 1952 103 407
of clam tissues in sea water of different salinities (abstract) ... 1948 95 265
of DMC by houseflies ..... 1953 104 426
of excised brain tissue (teleost) ..... 1953 104 445
of foetal and placental tissues (abstract) ..... 1951 101 195
of fresh water snails ..... 1953 104 301
of heart of Venus mercenaria (abstract) ..... 1941 81 289
of imaginal discs, normal and mutant, of Drosophila (abstract) 1947 93 228
*Metacercariae* encysted in Limulus (abstract) ..... 1950 99 347
*Metachromasy* of heparin-basic protein combinations, and effects of X-rays and of trypsin upon (abstract) ..... 1951 101 223
*Metachromatic staining*, theory of (abstract) ..... 1944 87 155
*Metal-chelating agents* ..... 1953 104 224
*Metallic silver*, resistance to marine fouling ..... 1948 94 25
*Metamorphosis* in frog tadpoles, effect of parrot-fish thyroid on ... 1951 101 157
in the larva of the tunicate, Styela partita (abstract) ..... 1944 87 166
of Amaroecium ..... 1952 103 226
of ascidian larvae (abstract) ..... 1941 81 286
of Bugula larvae, factors influencing ..... 1952 103 369
of house flies, normal and DDT-resistant, respiratory metabolism during ..... 1951 100 229

of Drosophila salivary gland, factors influencing..... 1943 84 13
of the pluteus of Arbacia punctulata..... 1949 97 223, 287
role of brain and prothoracic glands in..... 1952 103 120
*Method* for determining heat sensitivity in protozoa..... 1952 103 364
graphic, of describing the growth of animals..... 1946 90 141
of origin of androgenous males in Habrobracon (abstract).... 1948 95 259
*Methods* for respiratory studies of single cells..... 1952 102 157
*Methyl green* stainability of nucleic acids..... 1952 103 145
*Methylene blue,* effect on metamorphosis of Bugula larvae..... 1952 103 369
potassium cyanide and carbon monoxide, as indicators for studying oxidation-reduction potentials of developing marine eggs..... 1943 84 164
*Mice,* effect of adrenal preparations on tumor growth in..... 1952 102 226
white-footed, body temperatures of..... 1953 104 87
*Micelle* orientation in arthropod cuticle..... 1952 103 201
*Microciona,* dissociated, X-ray effects on restitution of (abstract). 1948 95 259
*Microincineration* as a means of demonstrating increase of calcium with age..... 1942 82 385, 392
*Microinjection* of calcium chloride into squid axon (abstract)..... 1950 99 344
*Micromalthus,* reversal of sex production in..... 1941 81 420
*Microphallus limuli,* morphology and life history..... 1951 101 307
*Micropterus salmoides,* digestive tract and enzymes of..... 1951 100 244
*Micropuncture* of Fundulus eggs (abstract)..... 1951 101 222
*Microscope, electron,* Arbacia spermatozoon and fertilization membrane under the..... 1943 85 151
*Microscopy* in the ultraviolet visible and infra-red (abstract)..... 1950 99 342
of ciliate fibrillar systems..... 1953 104 408
*Micrura leidy* (Verrill), glycogen depletion during starvation..... 1950 99 469
*Micturition* in the crayfish..... 1941 81 134
*Midges,* wing stroke and thoracic vibration frequency..... 1953 104 439
*Midpiece,* role of, in incorporation of $P^{32}$ into ribonucleic acid of Arbacia sperm (abstract)..... 1952 103 299
*Migration time* in slime mold, effects of salts and organic solutes on. 1952 102 273
*Millipede,* biology of..... 1952 102 100
*Mitochondria,* proposed mechanism for supra-vital staining of (abstract)..... 1950 99 322
*Mitochondrial arrangement* in alveolar epicytes and foam cells of mouse lungs, as induced by vacuoloids..... 1949 96 173
*Mitosis,* activity of desoxyribonuclease in (abstract)..... 1949 97 223
disruption of, in Colchicum, by colchicine (abstract)..... 1941 81 297
effects of halogenated alkyl amines upon..... 1952 103 44
effects of radioactive phosphorus on (abstract)..... 1952 103 299
in onion root tips, as seen by electron microscope..... 1951 100 107
in tail tips of Triturus (abstract)..... 1947 93 205
protoplasmic viscosity changes during..... 1948 95 57
oxygen consumption in single cells during..... 1952 102 185
somatic; preparing an animated diagram of (abstract)..... 1941 81 290
*Mitotic apparatus,* formation as studied by isolation techniques, in Arbacia and Mactra (abstract)..... 1952 103 292

*Mitotic effects* of prolonged irradiation with low intensity gamma rays on neuroblast of Chortophaga ..... 1953 **104** 313
*Mitotic inhibition* in Arbacia and Chaetopterus eggs ..... 1953 **104** 263
*Mitotic inhibitor* in starfish extracts (abstract) ..... 1952 **103** 303
*Mitotic poisons*, lactones as; tested on sea urchin eggs (abstract). 1948 **95** 252
*Mnemiopsis*, luminescence in (abstract) ..... 1941 **81** 296
*Modification* by photoperiod of daily rhythmicity in Uca ..... 1951 **101** 71
*Modiolus gill*, coordination of ciliary movement (abstract) ..... 1941 **81** 290
*Modiolus demissus*, digestion and absorption of fat in ..... 1952 **102** 118
*Molds*, chemotropism in ..... 1953 **104** 100
*Molgula manhattensis*, cross- and self-fertilization in ..... 1942 **82** 172
development of otolith (abstract) ..... 1949 **97** 236
relation of water transport to food requirements ..... 1952 **103** 356
physiology of excretion ..... 1948 **95** 307
*Mollusca and other invertebrates*, serological relationships ..... 1944 **87** 96
*Molluscs*, calcification in ..... 1952 **102** 9
carbonic anhydrase in ..... 1948 **94** 55
digestion and absorption of fat in ..... 1952 **102** 118
mucus formation and secretion in ..... 1952 **102** 252
shell formation in ..... 1953 **104** 394, 398
wood-boring, sexual phases of ..... 1941 **81** 168
*Molpadia intermedia*, absorption spectrum of red pigment ..... 1945 **88** 30
*Molting process* in the fiddler crab ..... 1953 **104** 115
factors influencing, in Crangon ..... 1941 **81** 215
factors influencing, in crayfish ..... 1948 **95** 229
*Molts*, larval, induction of, in Drosophila ..... 1944 **86** 113
*Monezia benedeni*, precipitin reactions and species specificity of .... 1942 **83** 88
*Mormoniella*, X-ray mutations and fecundity of (abstract) ..... 1949 **97** 344
*Morphogenesis* in the early chick embryo ..... 1950 **99** 120
*Morphology*, biological; water and (abstract) ..... 1950 **99** 367
external, of blue crab zoeal stages ..... 1944 **87** 145
of Callinectes sapidus, Rathbun ..... 1950 **98** 277
of Microphallus ..... 1951 **101** 307
*Most probable number* method to determine heat sensitivity of protozoa ..... 1952 **103** 364
*Motion pictures* showing the reactions of cells in frog tadpoles to implants of tantalum (abstract) ..... 1949 **97** 223
*Motor neuron* differentiation in chick embryo: effects of peripheral factors (abstract) ..... 1944 **87** 153
*Mouse tissues*, methyl green stainability of nucleic acids ..... 1952 **103** 145
*Mucin clot* reaction with sea urchin fertilizin ..... 1949 **96** 74
*Mucous epithelial cells*, cytochemical studies (abstract) ..... 1951 **101** 228
*Mucus formation* and secretion in Busycon, cytological study ..... 1952 **102** 252
*Multiconjugation* in Blepharisma ..... 1950 **98** 242
*Musca domestica*, cholinesterase activity as affected by various suspension media ..... 1953 **104** 323
respiratory metabolism during metamorphosis of normal and DDT-resistant insects ..... 1951 **100** 229

*Muscle,* apyrase activity of, in marine invertebrates (abstract).... 1948 95 281
apyrase systems from, temperature coefficients in different animals (abstract)..... 1948 95 287
autolysis of, in highly active and less active fish..... 1942 83 129
"break" excitation, doubtful character of, in skeletal (abstract) 1948 95 256
carbohydrate metabolism in (abstract)..... 1950 99 312
contraction, dual, of crustacean..... 1942 82 207
cross-striated, relation between ATP and tension in..... 1949 96 162
effect of stretch on action potentials (abstract)..... 1951 101 194
fiber, contraction nodes in frog skeletal muscle (abstract)..... 1949 97 226
fibers, arthropod, effects of calcium on..... 1952 103 421
fibers, investigation on (abstract)..... 1949 97 226
fibers, source of birefringence within (abstract)..... 1949 97 231
frog, chloride content of (abstract)..... 1949 97 248
heart, cytochrome system of (abstract)..... 1950 99 318
*Muscle* phosphorylase, crystalline, action pattern of (abstract).... 1948 95 238
potassium content of (abstract)..... 1950 99 312
protein solutions from skeletal (abstract)..... 1950 99 314
protoplasmic viscosity of (abstract)..... 1949 97 245
release of radioactive calcium from, during stimulation (abstract)..... 1949 97 264
response to nitrate (abstract)..... 1950 99 316
rigor resulting from thawing of frozen skeletal (abstract)..... 1949 97 270
*Muscles,* radular protractor, of Busycon canaliculatum, Linn..... 1942 82 190
*Musculature* development in Elasmobranchs (abstract)..... 1950 99 364
*Mustelus canis,* agglutination of erythrocytes by viruses..... 1952 102 149
early development, notes on..... 1950 99 474
heat produced by respiring whole blood (abstract)..... 1941 81 305
polyphyodonty in the dogfish (abstract)..... 1947 93 208
reabsorption of urea by kidney of..... 1953 104 45
renal chloride excretion (abstract)..... 1950 99 346
tooth succession in..... 1948 95 100
*Mutations* in biochemical requirements in Salmonella typhimurium (abstract)..... 1949 97 221
*Myoglobin,* occurrence of, in Busycon canaliculatum (abstract).... 1947 93 189
*Myosin* filaments in muscle..... 1946 90 32
*Mytilus californianus,* biology of..... 1944 87 59
rate of water propulsion as function of latitude..... 1953 104 171
*Mytilus edulis,* effects of sperm extracts on eggs of..... 1950 98 128
penetration of phosphate into gills of (abstract)..... 1950 99 319
physiological studies of differentiation in..... 1951 101 47
*Myxamoebae,* analysis of aggregation stage in development of. 1952 103 259, 446

## N

*Narcosis* and cell-division in Colpoda steinii..... 1945 88 12
*Narcotics,* fractionation of cellular respiration by (abstract)..... 1941 81 282
*Nasonia brevicornis* Ashmead (a chalcidoid wasp); dominant lethals induced in sperm of by X-rays (abstract)..... 1948 95 257
*Native protein* crystallography and diffraction patterns (abstract). 1944 87 157

*Natural population* of Nereis diversicolor, annual history of..... 1951 101 131
*n-butyl alcohol,* differential permeability effects of (abstract)..... 1951 101 210
*Necrosin* effects on cleavage of fertilized ova of sea urchin (abstract)..... 1949 97 244
*Necturus* fibrinogen, solubility in plasma-ethanol mixtures..... 1951 101 171
*Neotetrazolium chloride* reduction by X-rayed root-tip cells of Allium (abstract)..... 1951 101 230
*Neotoca bilineata,* germinal tissue in the reproductive cycle of..... 1943 84 87
reproductive cycle of..... 1941 81 70
*Nephron* of crayfish, anatomy of..... 1941 81 134
*Nereis diversicolor,* annual history of a natural population..... 1951 101 131
*Nereis limbata* egg, activation by a detergent (abstract)..... 1950 99 362
egg, fertilized, effects of lithium chloride on..... 1946 90 188
egg, Feulgen-positive reaction of oil droplets in (abstract)..... 1949 97 259
egg jelly, study with the polarization microscope (abstract)... 1949 97 258
egg, relation of plasma membrane, vitelline membrane and jelly (abstract)..... 1948 95 264
egg, solubility of the components (abstract)..... 1950 99 362
egg, solubility of the vitelline membrane (abstract)..... 1948 95 269
eggs, activation reactions and chemical aspects of sensitization..... 1948 95 333
eggs, certain chemical factors of artificial activation..... 1945 89 144
eggs, effects of hypertonic solutions on (abstract)..... 1948 95 269
eggs, effects of lithium chloride on the fertilized..... 1946 90 188
eggs, extrusion of jelly from, under electrical stimulus (abstract)..... 1949 97 260
fertilizin of (abstract)..... 1948 95 271
vascular patterns and behavior (abstract)..... 1950 99 350
zygote jelly, effect of Roentgen radiation (abstract)..... 1941 81 298
*Nereis vexillosa,* studies on the life history of..... 1943 84 106
*Nereis virens,* vascular patterns and behavior (abstract)..... 1950 99 350
*Nerve,* bioelectrical models of energy transformation in (abstract). 1949 97 268
crab, electric changes in relation to potassium movement (abstract)..... 1949 97 247
drug and ion action in relation to potassium movement (abstract)..... 1950 99 309
effect of "stabilizing" and "unstabilizing" agents on the metabolic mechanism supporting the resting potential (abstract). 1948 95 245
experimental method for rapid determination of extra-polar potential distribution in (abstract)..... 1949 97 249
fiber, giant, of squid; enzyme localization in (abstract)..... 1948 95 277
fibers, conduction in (abstract)..... 1950 99 320
fibers, perpetual proximo-distal growth of (abstract)..... 1944 87 160
low frequency characteristics of (abstract)..... 1950 99 344
membrane characteristics as measured by extra-polar stimulus escape (abstract)..... 1949 97 246
progressive changes in admittance after dissection (abstract).. 1950 99 344
protoplasmic viscosity of (abstract)..... 1949 97 245
response to nitrate (abstract)..... 1950 99 316

*Nerve-muscle system,* crustacean, influence of certain drugs..... 1942 83 334
*Nerves,* glycogen content of some invertebrate (abstract)..... 1949 97 252
spectrophotometric observations on (abstract)..... 1950 99 327
*Neural tube* formation, photochemical spectral analysis of..... 1944 87 73
Fundulus, extirpation of (abstract)..... 1952 103 310
*Neuroblast,* grasshopper, effect on mitosis of low intensity gamma rays..... 1953 104 313
*Neurohypophysis* of elasmobranch fishes (abstract)..... 1952 103 284
*"Neuromotor apparatus"* of Paramecium (abstract)..... 1952 103 282
*Neurosecretion:*
IV. Localization of neurosecretory cells in central nervous system of Limulus..... 1941 81 96
VI. A comparison of the system in insects with that of the vertebrates..... 1944 87 242
X. A relationship between the paraphysis and the paraventricular nucleus in the garter snake, Thamnophis sp..... 1951 101 106
XI. The effects of nerve section in the insect, Leucophaea maderae..... 1952 102 261
*Neurosecretory cells,* localization in Limulus.....1941 81 96
*Neurosecretory material* from Fundulus (abstract)..... 1950 99 371
*Neurosecretory pathway* in Thamnophis..... 1951 101 106
*Neurosecretory system* of brachyuran crustaceans..... 1952 103 157
*Neurospora crassa,* carotenoid formation by mutant strains of (abstract)..... 1952 103 286
detection of physiological mutants (abstract)..... 1949 97 254
heterokaryosis between opposite mating types (abstract)..... 1950 99 331
homology patterns in lethal mutations (abstract)..... 1950 99 332
vitamin $B_1$ in..... 1953 104 359
*Neurulation* in mechanically and chemically inhibited Amblystoma..... 1943 85 103
*Neutral red* effect on metamorphosis of Bugula larvae..... 1952 103 369
*New concept* of the action of dicumarol (abstract)..... 1948 95 277
*New experiments* and observations on sexual instability (abstract) 1948 95 255
*New method* of reproduction in Obelia..... 1948 95 94
*Nitella,* protoplasmic streaming and action potential (abstract)..... 1941 81 296
*Nitrate effects* on muscle and nerve responses (abstract)..... 1950 99 316
*Nitrogen deficiency* and coloration in red algae (abstract)..... 1950 99 360
*Nitrogen mustards,* effects on cleavage and development (abstract) 1948 95 251
effects on division of sea urchin eggs..... 1952 103 44
effects on fertilization and respiration of sperm and eggs in sea urchins..... 1948 94 267
*Nitrogen, organic,* gaseous and dissolved..... 1942 83 273
*Nitrogen tension* in swimbladder, in relation to depth..... 1951 101 178
in swimbladder of deep sea fishes..... 1953 104 75
*Nitrogenous organic matter in sea water,* decomposition and regeneration and factors influencing length of cycle. 1941 81 63 1942 83 273
the effect of enzyme poisons on..... 1947 92 110
*Nolella blakei,* n. sp..... 1949 97 158
*Nomenclature* of turbellarians..... 1952 103 195

*Non-integrative synapses* (abstract) ..... 1948 **95** 249
*Non-saponifiable lipid material* (abstract) ..... 1951 **101** 237
*Note* on spawning of the holothurian, Thyone briareus (Lesueur) . 1948 **95** 296
on the absorption spectra of the blood of Eudistylia and of the red pigment in corpuscles of Cucumaria and Molpadia ..... 1945 **88** 30
*Nuclear and cytoplasmic interrelations* in fertilization ..... 1949 **96** 270
*Nuclear breakdown* in Chaetopterus egg, mechanism of (abstract) . 1952 **103** 292
*Nuclear fusion*, activity of DN-ase in (abstract) ..... 1949 **97** 223
*Nuclear precursor* to ribo- and desoxyribo-nucleic acids (abstract) 1948 **95** 244
*Nuclear size*, effect on, of X-rays, in grasshopper embryos ..... 1951 **101** 138
*Nuclear volume*, action of estrone and progesterone on ..... 1950 **99** 112
*Nuclear volumes* and amount of DNA and intranuclear proteins in rat cells ..... 1951 **101** 95
*Nuclease* activity in Tetrahymena, effect of X-rays on ..... 1953 **104** 351
*Nuclei*, action of DN-ase on ..... 1952 **103** 319
division mechanism of cells with excentric ..... 1947 **93** 139
dividing, toxicity responses of, in Allium (abstract) ..... 1949 **97** 235
*Nucleic acids* as growth factors in Drosophila (abstract) ..... 1947 **93** 213
comparison of base composition of ..... 1950 **99** 112
labile P in (abstract) ..... 1949 **97** 224
methyl green stainability ..... 1952 **103** 145
*Nucleoli*, tests of, and cytoplasmic granules in marine eggs (abstract) ..... 1941 **81** 298
*Nucleolus* in living marine eggs ..... 1942 **82** 47
role in spindle formation (abstract) ..... 1951 **101** 214
*Nucleoprotein complexes* of sperm nuclei (abstract) ..... 1952 **103** 314
*Nucleoproteins* from invertebrate tissues (abstract) ..... 1947 **93** 220
from marine invertebrates (abstract) ..... 1948 **95** 280
*Nucleus*, DNA content as a cytotaxonomic character in mantids ... 1951 **100** 178
interphase growth of ..... 1949 **97** 187
osmotic properties of ..... 1942 **82** 52
*Nudibranchiata* of New England (abstract) ..... 1950 **99** 352
*Nurse cells* in Littorina irrorata, behavior of ..... 1942 **82** 461
*Nutrition* and sexuality in protandric gastropods (Crepidula) ..... 1948 **94** 158
and feeding mechanisms in three species of Bresslaua ..... 1941 **81** 221
in larvae of Tenebrio molitor ..... 1942 **83** 428
*Nutritional requirements* of the early chick embryo ..... 1950 **99** 120
*Nymphea* L., cytological studies in (abstract) ..... 1949 **97** 257

## O

*Obelia*, new method of reproduction in ..... 1948 **95** 94
*Observations on the* morphology and life history of Microphallus limuli, n. sp. ..... 1951 **101** 307
reproduction of the poeciliid, Lebistes reticulatus ..... 1952 **102** 30
respiration of Australorbis glabratus and some other aquatic snails ..... 1948 **95** 199
*Ocelli* in ants ..... 1947 **93** 112
in Limulus, retinal electrical response characteristics ..... 1951 **101** 114

*Octopus,* pigments of two-spotted ..... 1942 82 284
*Ocypode albicans,* chloride ion regulation and oxygen consumption ..... 1951 101 259
*Oil droplets* of Nereis egg, Feulgen-positive reaction (abstract) ... 1949 97 259
*Olfactory response* and receptor population in the blowfly ..... 1952 102 111
*Oncorhynchus nerka,* pituitary effect on water retention by frogs .. 1952 102 25
*Onion root tip,* action of saponin on ..... 1951 100 1
mitosis study by electron microscope ..... 1951 100 107
nuclei, stainability of nucleic acids by methyl green ..... 1952 103 145
*On the combining weight* of Cypridina luciferin (abstract) ..... 1948 95 263
*On the energy source* of the nerve action potential (abstract) ..... 1944 87 158
*On the interpretation* of rates of regeneration in Tubularia and the significance of the independence of mass and time ..... 1944 87 27
*On the nature of iron binding* by siderophilin, conalbumin, hydroxylamine, aspergillic acid and related hydroxamic acids (abstract) ..... 1948 95 282
*On the relation* between tension and ATP in cross-striated muscle. 1949 96 162
*On the specificity* of cholinesterase (abstract) ..... 1948 95 241
*Oöcytes,* gradient patterns in ..... 1953 104 12
from Asterias and Psammechinus, respiration of ..... 1948 95 124
of fresh water pulmonates, experimental cytological studies of. 1947 92 10
of various marine invertebrates, alkaline phosphatase activity in (abstract) ..... 1947 93 209
*Opsanus tau,* cytochrome oxidase and succinic dehydrogenase in isolated islet tissue of ..... 1951 100 191
interaction between implanted embryos and the internal organs of an adult teleost (abstract) ..... 1947 93 193
*Organic ions,* comparison of the binding ability of hemocyanin and serum albumin for .....1947 93 218 (abstract) 1948 94 40
*Organic solutes,* effect on migration time of slime mold ..... 1952 102 273
*Origin and function* of the protoplasmic constituents in Pelomyxa carolinensis ..... 1945 88 207
*Orthoptera,* nuclear content of DNA as a cytotaxonomic character. 1951 100 178
reaction of hemolymph to vertebrate blood coagulants ..... 1953 104 372
*Oryzias latipes,* reproductive processes of ..... 1943 84 115
*Oscillographic studies* of the giant nerve fiber system of Lumbricus (abstract) ..... 1944 87 159
*Oscilloscopic analysis* of the flight sounds of Drosophila ..... 1950 99 300
*Osmosis,* nuclear properties of ..... 1942 82 52
*Osmotic hemolysis* in hypertonic solutions (abstract) ..... 1948 95 246
*Osmotic pressure,* accommodation to, in marine invertebrates ..... 1942 82 372
*Ostrea virginica,* accumulation of manganese and the sexual cycle (abstract) ..... 1941 81 278
intracardial injection of india ink ..... 1950 98 227
seasonal gonadal changes ..... 1942 82 195
*Otolith* of Molgula manhattensis, development of (abstract) ..... 1949 97 236
*Ova,* clam, X-ray effects on ..... 1953 104 197
oxygen consumption during division ..... 1952 102 185
necrosin effect on cleavage (abstract) ..... 1949 97 244

*Ovalbumin* conversion to plakalbumin (abstract) ..... 1950 99 322
*Ovarian inhibition* by a sinus gland principle in the fiddler crab.... 1949 96 228
*Oviposition,* genetic block to, in chalcidoid wasp (abstract)..... 1948 95 243
*Ovulation* in Mustelus canis..... 1950 99 474
*Ovum* of Phoronopsis, maturation and fertilization..... 1953 104 182
*Oxalate,* for prevention of clotting reaction in calcium-treated arthropod muscle fibers..... 1952 103 421
*Oxidation* of indicator dyes in echinoderm oöcytes and embryos... 1953 104 12
*Oxidation and reductions* catalyzed by isolated chloroplasts..... 1950 99 318
*Oxidation-reduction* dyes and "lithium larvae" (abstract)..... 1951 101 217
fundamental principles in..... 1949 96 293
indicator patterns in regeneration of Triturus larvae..... 1951 101 121
potentials of, in developing marine eggs..... 1943 84 164
*Oxidations* in living cells, effects of CO and CN (abstract)..... 1941 81 284
*Oxidative pathway* of glucose-6-phosphate utilization (abstract)... 1950 99 369
*Oxidative phosphorylation* by a cell-free particulate enzyme system from unfertilized Arbacia eggs (abstract)..... 1949 97 242
*Oxine treatment* of sea urchin eggs..... 1953 104 224
*Oxygen and hydrogen ions,* influence of relationship on the regeneration of Tubularia..... 1942 82 340
*Oxygen consumption* and activity of goldfish; application to the measurement of respiratory metabolism in fishes..... 1946 91 312
and chloride ion regulation in crabs..... 1951 101 259
and oxygen tension in snails..... 1953 104 301
and water loss in Peripatus..... 1946 91 181
and water metabolism in turtle embryos..... 1945 88 112
by fox sperm..... 1942 83 353
during cell division..... 1952 102 185
effect of centrifugation on (abstract)..... 1941 81 303
effect of urea and its compounds on, in blocked and active embryonic cells..... 1949 96 1
influence of temperature, pH, and inorganic ions upon..... 1943 84 148
in relation to cell division and fertilization membrane formation in artificially fertilized eggs (abstract)..... 1947 93 195
in single protozoans..... 1952 102 178
of excised brain tissue of marine teleosts..... 1953 104 445
of yeast and the effect of temperature change (abstract)..... 1947 93 227
*Oxygen tension* and the inhibition of cell division..... 1953 104 263
toleration of by cave and stream crayfish (abstract)..... 1947 93 190
*Oxygen uptake* as affected by sulfanilamide..... 1950 98 94
in Melanoplus..... 1951 100 153
of isolated blastomeres and polar lobes..... 1951 101 47
*Oxygen utilization* in relation to growth and differentiation in the slime mold, Dictyostelium discoideum (abstract)..... 1949 97 240
*Oxygen-hemoglobin equilibrium* in tautog whole and hemolyzed blood..... 1941 81 307
*Oyster,* carbonic anhydrase and growth..... 1950 98 19
crab, Pinnotheres ostreum, early life history of..... 1947 93 250
gametogenesis under conditions of depressed salinity..... 1949 96 263

growth during different months ..... 1949 97 82
measurement of shell formation rate ..... 1952 103 269
new commensal hydroid in mantle cavity of ..... 1951 101 162
*Oysters,* accumulation and discharge of sperm living at different depths ..... 1942 82 413
feeding, in relation to tidal stages and to periods of light and darkness ..... 1946 90 244
larvae, food and feeding of ..... 1953 104 334
physiologically different races of ..... 1951 101 151
Polydora, or mud worm, in suspended oysters ..... 1943 85 69
relation between water transport and food requirements ..... 1952 103 356
relation of growth to ecology ..... 1951 101 226
studies on growth and ecology (abstract) ..... 1952 103 306
temperature requirements for maturation of gonads ..... 1952 103 80

## P

*Palaemonetes,* hormonal regulation of distal retinal pigment ..... 1952 102 212
*Palolo,* Atlantic, lunar cycle and reproduction (abstract) ..... 1941 81 278
*Panulirus argus,* cardio-inhibition and acceleration in ganglion of .. 1953 104 156
*Papers* presented at the meetings of the Society of General Physiologists, *see* Abstracts
*Parabiosis* experiments in Cecropia silkworms ..... 1952 103 120
*Parafolliculina violacea* at Woods Hole, Mass. ..... 1942 83 91
*Paralichthys dentatus,* origin of artificially developed melanophores ..... 1941 81 341
*Paramecia,* living and lyophilized; mating reactions between opposite mating types (abstract) ..... 1949 97 245
*Paramecium,* at fission stage; method for obtaining large numbers (abstract) ..... 1950 99 366
effects of haematoporphyrin and other substances upon the X-ray sensitivity of (abstract) ..... 1952 103 302
eight species of; hydrogen ion concentration in growth and cultivation (abstract) ..... 1948 95 272
electron microscope observations of the trichocysts and cilia ... 1946 91 141
electron microscopy of the fibrillar system ..... 1953 104 408
environmental factors concerned with lethality of X-rays (abstract) ..... 1952 103 311
food vacuole ..... 1947 92 31
growth on a non-living medium (abstract) ..... 1950 99 353
method for obtaining large numbers at fission stage (abstract) 1950 99 366
oxygen consumption in single specimens ..... 1952 102 178
*Paramecium aurelia,* fertilization studies on a non-conjugating race of (abstract) ..... 1947 93 310
variety 4; mating types, sexual isolation and sexual responses to diverse conditions ..... 1943 85 36
and Paramecium caudatum, effect of cyanide on respiration ... 1945 89 76
*Paramecium bursaria,* action of X-rays on mating types and conjugation of (abstract) ..... 1947 93 201
biological effects of X-rays on mating types and conjugation .. 1948 94 113

maturity, immaturity and age in ..... 1944 86 131
temporary pair formation ..... 1946 91 112
free from Zoöchlorellae (abstract) ..... 1941 81 304
*Paramecium calkinsi*, action of enzymes on mating type substances. 1951 101 99
induction of autogamy in (abstract) ..... 1948 95 265
mating types and conjugation of four races, and effect of X-rays on mating reaction (abstract) ..... 1948 95 271
occurrence of a new variety (abstract) ..... 1950 99 366
*Paramecium caudatum*, an extra post-zygotic division (abstract) .. 1948 95 265
Japanese and American varieties (abstract) ..... 1950 99 348
mating reaction (abstract) ..... 1949 97 239
and Paramecium aurelia, effect of cyanide on respiration ..... 1945 89 76
*Paramecium multimicronucleatum*, uptake of radioactive phosphorus ..... 1952 103 190
*Paramecium trichium*, abbreviated conjugation process ..... 1949 97 331
*Paraphysis* and paraventricular nucleus, relationship of, in Thamnophis ..... 1951 101 106
*Parasite, malarial*, survival conditions, *in vitro* (abstract) ..... 1941 81 284
*Parasitic castration* of Callinectes ..... 1950 98 277
*Parasitism* in Peltogaster paguri ..... 1942 83 401
*Paraventricular nucleus*, relationship with paraphysis ..... 1951 101 106
*Parietal cells*, nuclear volumes, intranuclear proteins and DNA .... 1951 101 95
*Parrot fish thyroid*, effect on tadpole metamorphosis ..... 1951 101 157
extract, effect on respiratory metabolism of white rat ..... 1952 102 278
*Partial separation* of the cytochromes of mammalian heart muscle (abstract) ..... 1948 95 239
*Passalus cornutus*, changes in weight and water content during life cycle of ..... 1944 86 23
*Pathology* and immunity to infection with heterophyid trematodes (abstract) ..... 1941 81 279
*Patiria miniata*, gradient patterns in oöcytes and embryos ..... 1953 104 12
*Pectoral fin* of Gambusia, sexual dimorphism in ..... 1942 83 389
*Pelecypods*, especially Teredo navalis, development of primary gonads and differentiation of sexuality ..... 1943 84 178
*Pelmatohydra oligactis*, regulation of spontaneous structural anomalies in ..... 1952 103 104
reproductive potential of a single clone ..... 1950 99 285
*Pelomyxa carolinensis*, digestion of fat ..... 1942 83 320
effect of food content and temperature on respiration ..... 1944 86 146
effects of cyanide, arsenite and urethane on respiration ..... 1944 87 138
effects of ethyl alcohol on growth and respiration ..... 1952 103 97
(Wilson), or Chaos chaos (Linn.)? ..... 1945 88 139
*Peltogaster paguri*, life history and host-parasite relationship ..... 1942 83 401
*Penaeus setiferus* (Linn.), study of reproductive organs ..... 1948 94 244
*Penetration* of radioactive potassium into eggs of various sea urchins and effects of low temperature (abstract) ..... 1948 95 252
of radioactive phosphate into sea urchin eggs (abstract) ..... 1948 95 262
*Pennaria*, mechanism for synchronous spawning ..... 1942 82 329

*Pentatomidae* (Hemiptera), regular occurrence of heteroploidy.... 1945 88 63
*Pentidotea resecata* (Stimpson), post-embryonic growth changes.. 1948 95 107
*Pepsin,* a delayed effect of X-rays on (abstract)..... 1947 93 189
*Peptide effects* on spermatozoa (abstract)..... 1950 99 324
*Peranema trichophorum,* effect of dyes on response to light (abstract)..... 1941 81 285
*Periblast* in teleost gastrulation (abstract)..... 1951 101 201
significance in epiboly of Fundulus egg (abstract)..... 1949 97 249
*Peripheral circulatory changes* during shock produced by hemorrhage (abstract)..... 1944 87 161
*Periplaneta americana,* structure of peritrophic membrane..... 1952 103 384
thoracic movements and potentials in flight of..... 1951 100 95
*Perisarc,* effect of covering, in tubularian regeneration..... 1942 83 416
*Peritrich* (new) from Woods Hole, Mass. (abstract)..... 1947 93 200
*Peritrophic membranes* of insects, fine structure of..... 1952 103 384
*Permeability* changes in sea urchin blastula wall, after hatching... 1952 102 74
of eggs (Arbacia) to radioactive phosphorus (abstract)..... 1947 93 203
of eggs (frog) to radioactive sodium (abstract)..... 1947 93 225
of erythrocytes at different temperatures (abstract)..... 1950 99 325
of erythrocytes to physostigmine and acetylcholine (abstract). 1950 99 311
of human erythrocytes to potassium (abstract)..... 1950 99 311
of yeast cells to radiophosphate..... 1942 83 326
photoelectric method of measuring (abstract)..... 1949 97 228
*Peromatus notatus,* chromatin bridges and irregularity of mitotic coordination..... 1941 81 149
*Peromyscus,* body temperatures in relation to environmental temperatures and to heat and cold stress..... 1953 104 87
species difference in rates of osmotic hemolysis..... 1943 85 52
*Perophora viridis,* regeneration in..... 1948 94 184
*Peroxidase* in cellular respiration, possible role of (abstract)..... 1947 93 227
*pH effects,* on denaturation of proteins (abstract)..... 1950 99 337
on denaturation of ricin (abstract)..... 1950 99 323
on "resting" Tetrahymena (abstract)..... 1952 103 310
estimation in reconstituting pieces of Tubularia stem (abstract) 1948 95 243
influence on oxygen consumption on larval Eustrongylides.... 1943 84 148
intracellular, in Arbacia egg (abstract)..... 1941 81 305
*Phagocata sp.,* increase of cortical calcium with age in animal cells. 1942 82 392
*Pharmacology,* cardiac, of a cladoceran..... 1949 97 138
of Daphnia..... 1942 83 165
of haemal vessels of Stichopus californicus..... 1952 102 249
of myogenic and neurogenic hearts (abstract)..... 1941 81 292
of the heart of Cancer magister..... 1942 82 255
*Phascolosoma gouldii,* effect of temperature on light absorption by the cell-free coelomic fluid in (abstract)..... 1947 93 202
*Phase-boundary theory* of bio-electricity (abstract)..... 1950 99 314
*Phase contrast studies* of insect blood..... 1953 104 372
*Pheasants,* ring-necked, X-rays and reproductive cycle in..... 1944 87 134
*Phenocopy* production with monochromatic ultraviolet irradiation.. 1947 92 1

*Phenylthiourea*, effects on histology of salamander thyroid and pituitary ..... 1953 **104** 250
effect on oxygen consumption of blocked and active embryonic cells ..... 1949 **96** 1
*Phormia regina*, adaptation of tarsal receptors to chemical stimulation ..... 1952 **103** 178
carnitine content of ..... 1953 **104** 359
relation of olfactory response to receptor population ..... 1952 **102** 111
respiration and water loss and its relation to physiological action of DDT ..... 1949 **97** 64
*Phoronopsis viridis*, reproduction in ..... 1953 **104** 182
*Phosphagen* in annelids (Polychaeta) (abstract) ..... 1948 **95** 273
in fertilization of sea urchin egg (abstract) ..... 1950 **99** 316
*Phosphatase activity* in bones (abstract) ..... 1950 **99** 321
in chloride cells of gill in Fundulus (abstract) ..... 1947 **93** 224
in marine teleosts ..... 1950 **99** 152
in Tetrahymena ..... 1950 **99** 335, 357 1951 **100** 165
*Phosphatase*, phosphoprotein (abstract) ..... 1944 **87** 164
*Phosphatases*, acid, alkaline, in chick embryos ..... 1944 **86** 51
activity and distribution in early development of Arbacia (abstract) ..... 1948 **95** 250
in normal and reorganizing Stentor ..... 1949 **97** 108
marine invertebrate (abstract) ..... 1949 **97** 262
*Phosphate* accumulation in fertilized sea urchin egg (abstract) ..... 1949 **97** 225
compounds and the reversal of cell division inhibition ..... 1953 **104** 263
content in Fundulus egg, early changes of ..... 1943 **84** 226
ions, action on Arbacia and Asterias eggs ..... 1943 **84** 213
penetration into gills of Mytilus (abstract) ..... 1950 **99** 319
permeability of yeast cells to radiophosphate ..... 1942 **83** 326
utilization by diatoms ..... 1951 **101** 274
*Phosphoprotein phosphatase*, a new enzyme from the frog egg (abstract) ..... 1944 **87** 164
*Phosphorus* as a function of temperature in Arbacia embryos (abstract) ..... 1951 **101** 231
distribution in the unfertilized egg of Arbacia (abstract) ..... 1947 **93** 192
in ovarian eggs of Triturus pyrrhogaster (abstract) ..... 1951 **101** 231
*Phosphorus, radioactive*, chemical form after entry into egg (abstract) ..... 1948 **95** 262
effect on division time of Arbacia egg (abstract) ..... 1950 **99** 358
effect on egg production and embryo survival in Habrobracon. 1952 **102** 128
incorporation with the nucleoproteins and phosphoproteins of developing Arbacia embryos (abstract) ..... 1948 **95** 279
intake and deposition of in relation to shell formation in molluscs ..... 1952 **102** 9
uptake in Paramecium multimicronucleatum ..... 1952 **103** 190
*Phosphorylating mechanism* in Arbacia, effects of calcium chloride, freezing and thawing on (abstract) ..... 1951 **101** 220
*Phosphorylating systems*, action of dinitrocarvacrol and of dinitrothymol upon (abstract) ..... 1950 **99** 335

*Phosphorylation* in cell-free Arbacia egg extracts (abstract) ..... 1949 97 234
oxidative, by an enzyme system from unfertilized Arbacia eggs (abstract) ..... 1949 97 242
oxidative, by an enzyme system from fertilized Arbacia eggs (abstract) ..... 1950 99 333
*Photochemical inactivation* of chymotrypsin (abstract) ..... 1950 99 317
*Photochemical spectro-analysis* of neural tube formation ..... 1944 87 73
*Photodynamic studies* on Arbacia eggs (abstract) ..... 1941 81 297
*Photoelectric method* of measuring permeability (abstract) ..... 1949 97 228
*Photography* with infra-red light of Arbacia eggs (abstract) ..... 1950 99 360
*Photometric estimation* of DNA in grasshopper embryonic nuclei .. 1951 101 138
of DNA in rat cells ..... 1951 101 95
*Photo-microscopy* with Polaroid Land camera (abstract) ..... 1952 103 308
*Photo-oxidations* (riboflavin-sensitized) and their significance in plant physiology (abstract) ..... 1949 97 270
*Photoperiodic response* of male birds; significance of dark period in . 1952 103 345
*Photoperiod* modification in daily rhythmicity of Uca ..... 1951 101 71
*Photo-reactivation* in Colpidium ..... 1952 103 336
in Strongylocentrotus purpuratus ..... 1950 99 163
*Photo-receptors*, invertebrate (abstract) ..... 1950 99 342
*Photo-recovery* in amphibian larvae (abstract) ..... 1950 99 330
in eggs and sperm of Arbacia (abstract) ..... 1950 99 342
*Photo-reduction* by a species of blue-green alga .. 1949 97 269 1950 99 157
*Photo-sensitive pigment* of the squid retina (abstract) ..... 1949 97 248
*Photosynthesis* as affected by ultraviolet light on Chlorella pyrenoidosa (abstract) ..... 1949 97 222
experiments on, and on chloroplasts (abstract) ..... 1948 95 270
in unicellular algae; time-course studies, using the platinum electrode with time selection (abstract) ..... 1949 97 271
of Ulva (abstract) ..... 1947 93 203
*Photosynthesis and photoreduction* by a blue-green alga 1949 97 269 1950 99 157
*Photosynthetic intermediate* (abstract) ..... 1948 95 284
*Photosynthetic reactions* (abstract) ..... 1950 99 371
*Phrixothrix*, luminescent reactions in (abstract) ..... 1950 99 360
*Phyllodistomum solidum* (Rankin, 1937), life history of ..... 1943 84 59
*Physalia*, chromatoproteins in the tentacles of (abstract) ..... 1947 93 204
*Physical constants* of the Fundulus egg (abstract) ..... 1949 99 337
*Physiological analysis* of cortical response in sea urchin egg to stimulating reagents:
I. Response to sodium choleinate and wasp venom ..... 1953 104 210
II. Nature of the cortical changes induced ..... 1953 104 216
*Physiological aspects* of reproduction in Xiphophorus ..... 1953 104 240
*Physiological mutants*, detection of, in Neurospora (abstract) ..... 1949 97 254
*Physiological studies* in differentiation ..... 1951 101 47
on interphasic growth of the nucleus ..... 1949 97 187
*Physiologically-different* races of oysters ..... 1951 101 151
*Physiology* of commensalism, *see* Studies

*Physiology of insect diapause:*
I. The role of the brain in pupal dormancy phenomena..... 1946 **90** 234
II. Pupal brain and prothoracic gland coordination in metamorphosis of the giant silkworm, P. cecropia..... 1947 **93** 89
III. Significance of prothoracic glands in embryonic and later development..... 1948 **94** 60
IV. Brain and prothoracic glands as an endocrine system in the Cecropia silkworm..... 1952 **103** 120
*Physiology* of tracheal filling in Sciara larvae (abstract)..... 1949 **97** 267
of Uca red chromatophores..... 1950 **98** 218
*Physostigmine,* action on intestine of Daphnia magna..... 1941 **81** 105
effects on erythrocyte permeability (abstract)..... 1950 **99** 311
*Pigment* displacement mechanism in unicellular chromatophores... 1944 **87** 252
deposition in feather germs of chick embryos (abstract)..... 1941 **81** 280
hormonal regulation of distal retinal, in Palaemonetes..... 1952 **102** 212
migration, retinal, in Leander serratus..... 1950 **98** 66
photosensitive, of squid retina (abstract)..... 1949 **97** 248
suppression in salamander larvae, analysis of..... 1951 **100** 127
*Pigmentation* changes during reconstitution in Tubularia..... 1952 **102** 91
of regenerating scales on ventral surface of the summer flounder, factors influencing (abstract)..... 1941 **81** 301
in Thyone briareus (abstract)..... 1950 **99** 343
*Pigments* of the opalescent squid and the two-spotted octopus..... 1942 **82** 284
*Pinna,* calcification of shell..... 1952 **102** 9
*Pinnotheres ostreum,* parasitic upon the American oyster..... 1945 **88** 269
*Piperazine* dihydrochloride and glycylglycine as non-toxic buffers.. 1949 **96** 233
*Pituitary* in the chick, distribution and development of a melanophore hormone in (abstract)..... 1941 **81** 281
in the fowl, cytological study of the anterior lobe..... 1942 **82** 79
influence on vertebrate chromatophores..... 1950 **99** 487
histology of salamanders treated with thyroid inhibitors..... 1953 **104** 250
posterior lobe preparations; influence on action of phenolases *in vitro* (abstract)..... 1952 **103** 304
*Plaice,* color change and pigmentary innervation in..... 1942 **82** 273
*Planarian,* increase of cortical calcium with age..... 1942 **82** 392
*Plankton* as food for oyster larvae..... 1953 **104** 334
*Plant cell lineages,* irreversible differentiation in (abstract)..... 1947 **93** 215
*Plant cells,* growth and metabolism in (abstract)..... 1950 **99** 309
*Plant hormones,* growth and respiration..... 1949 **96** 296
*Plant juices,* action in chemotropism of Rhizopus..... 1953 **104** 100
*Plant physiology,* significance of riboflavin-sensitized photo-oxidations in (abstract)..... 1949 **97** 270
*Plant tissues,* chemical induction of bud formation in (abstract)... 1949 **97** 268
*Plasma-ethanol mixtures,* vertebrate fibrinogen solubilities in..... 1951 **101** 171
*Plasma substitute,* gelatin as a (abstract)..... 1944 **87** 162
*Plasmodium lophurae,* conditions affecting survival *in vitro* (abstract)..... 1941 **81** 284
*Plastid* development in the scutellum of Triticum sativum and of Secale cereale (abstract)..... 1947 **93** 211

*Platysamia cecropia,* pupal brain and prothoracic gland interaction in metamorphosis ..... 1947 93 89
brain and prothoracic glands as an endocrine system ..... 1952 103 120
tyrosinase and respiration of pupae ..... 1952 102 39
*Plethodon cinereus,* effects of thiourea and phenyl-thiourea upon development (abstract) ..... 1947 93 199
*Ploidy* in Habrobracon embryos; relation to X-ray damage ..... 1952 103 170
*Pluteus of Arbacia punctulata,* growth and metamorphosis ... 1949 97 223, 287
growth of arms in ..... 1950 98 34
*Podophyllin* effects on maturation and cleavage in the starfish egg (abstract) ..... 1947 93 214
*Podophyllotoxin* and related substances, inhibition of cleavage by (abstract) ..... 1947 93 192
*Poeciliid fishes,* embryonic development ..... 1945 88 233
reproduction observations ..... 1952 102 30
viviparous, embryonic growth in Heterandria formosa ..... 1944 87 37
*Poisoning and recovery* in barnacles and mussels ..... 1947 92 73
*Polar lobes* of Mytilus edulis, oxygen uptake in ..... 1951 101 47
*Polarity* determination in Tubularia crocea ..... 1942 82 243
in limbs of Urodele larvae (abstract) ..... 1949 97 232
in Dictyostelium discoideum ..... 1950 99 143
*Polarization;* kinetochore movements; bivalent structure; in meiosis of male mantids ..... 1943 85 265
*Polarized light* and the orientation of bees (abstract) ..... 1950 99 326
*Polydora* in oysters suspended in water ..... 1943 85 69
*Polydora ligni,* behavior and tube building habits (abstract) ..... 1944 87 164
*Polynoid worms,* commensalism in ..... 1951 100 71
*Polyphyodonty* in Mustelus canis (abstract) ..... 1947 93 208
*Popillia japonica* (Newman), reproductive glands of ..... 1950 99 49
*Population* development at different temperatures in Daphnia, analysis of ..... 1943 85 116
density of Nereis diversicolor ..... 1951 101 131
dynamics in Escherichia coli (abstract) ..... 1950 99 331
effects of density on Lymnea palustris ..... 1942 83 283
*Populational distribution* of the capacity to initiate aggregation in the slime molds ..... 1952 103 259
*Porphyridium cruentum* Nägeli and P. marinum Kylin (abstract) . 1949 97 238
*Position effects,* altering the expression of (abstract) ..... 1947 93 194
*Post-embryonic growth changes* and their taxonomic significance in the isopod, Pentidotea resecata (Stimpson) ..... 1948 95 107
*Potassium* accumulation in human erythrocytes (abstract) ..... 1950 99 310
content of Arbacia egg as influenced by glycolysis (abstract) . 1949 97 260
content of leucocytes and muscle (abstract) ..... 1950 99 312
of the yeast cell (abstract) ..... 1950 99 319
of yeast as influenced by glycolysis (abstract) ..... 1949 97 260
cyanide, methylene blue and carbon monoxide, as indicators for oxidation-reduction potentials of developing marine eggs .... 1943 84 164
exchange between cells and plasma of canine blood, *in vitro,* using $K^{42}$, in studies of the kinetics of (abstract) ..... 1948 95 287

exchange in Ulva (abstract) ..... 1952 **103** 308
influence on oxygen consumption of frog nerves (abstract) ... 1951 **101** 198
ion effect on metamorphosis of Bugula larvae ..... 1952 **103** 369
ions and Spisula eggs (abstract) ..... 1952 **103** 290
loss from rabbit red cells (abstract) ..... 1950 **99** 325
*Potassium movement* as it affects electrical changes in crab nerve (abstract) ..... 1949 **97** 247
in relation to drug and ion action in nerve (abstract) ..... 1950 **99** 309
*Potassium permeability* in Arbacia egg (abstract) ..... 1941 **81** 295
in human erythrocytes (abstract) ..... 1950 **99** 311
*Potential* changes in insect thoracic muscle during flight ..... 1951 **100** 95
nerve action, energy source of (abstract) ..... 1944 **87** 158
*Potentials*, action, in Limulus ocelli ..... 1951 **101** 114
*Precipitin* reactions of Monezia ..... 1942 **83** 88
*Pre- and post-anaerobic oxygen consumption* in snails ..... 1953 **104** 301
*Predation experiments*, using $P^{32}$ as "tag" for Paramecium ..... 1952 **103** 190
*Predictable mutations* in bacteria (abstract) ..... 1948 **95** 258
*Presence* of the tricarboxylic acid cycle in Colpidium ..... 1949 **96** 257
*Pressure*, atmospheric, effect on Drosophila flight ..... 1949 **97** 115
*Pressures*, coelomic, in Sipunculus nudus ..... 1950 **98** 161
*Prezone phenomenon* in sperm agglutination ..... 1949 **97** 95
*Primitive coccid chromosome cycle* in Puto sp. ..... 1944 **87** 167
*Prionotus carolinus*, agglutination of erythrocytes by viruses ..... 1952 **102** 149
*Procaine method* for immobilizing fish for cardiac and other experiments (abstract) ..... 1947 **93** 208
*Progesterone* action on nuclear volume ..... 1950 **99** 112
*Prolongation* of life span of sea urchin spermatozoa and improvement of the fertilization reaction by treatment of sperm and eggs with metal-chelating agents ..... 1953 **104** 224
*Propagated changes* in light scattering accompanying nerve activity (abstract) ..... 1951 **101** 205
*Propagating nature* of the cortical response of sea urchin egg ..... 1953 **104** 216
*Properties* of the surface coat in Fundulus embryos (abstract) .... 1948 **95** 271
*Propulsion* of water in Mytilus as a function of latitude ..... 1953 **104** 171
*Propylthiouracil-treated thyroid* effect on amphibian metamorphosis ..... 1951 **101** 157
*Prosthetic groups* of cytochrome oxidase and cytochrome *b*, separation and partial identification of (abstract) ..... 1952 **103** 287
*Protandry* in Phoronopsis ..... 1953 **104** 182
*Protein crystals*, water in (abstract) ..... 1951 **101** 235
*Protein molecules* with relatively low molecular weights (abstract) 1951 **101** 234
*Protein networks* and biological morphology (abstract) ..... 1947 **93** 202
*Protein solutions* from skeletal muscle (abstract) ..... 1950 **99** 314
*Protein staining* and measurement with bromphenol blue ..... 1953 **104** 57
*Protein structure*, the bearing of new results on cytological interpretations (abstract) ..... 1952 **103** 313
and biological specificity (abstract) ..... 1948 **95** 247

*Proteins*, crystalline; the cage hypothesis and a common feature of X-ray diffraction studies (abstract) ..... 1948 **95** 272
globular, and recent research results (abstract) ..... 1952 **103** 313
intranuclear, in rat cells ..... 1951 **101** 95
kinetics of the denaturation of (abstract) ..... 1950 **99** 336
pH effects on (abstract) ..... 1950 **99** 337
their particle status (abstract) ..... 1949 **97** 251
*Proteolytic enzymes* in cytoplasmic granule preparations from Arbacia eggs (abstract) ..... 1949 **97** 264
*Prothoracic glands* and brain as an endocrine system ..... 1952 **103** 120
of insects ..... 1949 **97** 111
of Leucopheaea maderae (Orthoptera) ..... 1948 **95** 186
*Protoplasm*, pH determination of, in Amoeba and Arbacia ..... 1944 **86** 98
*Protoplasmic clotting* and cell division (abstract) ..... 1949 **97** 242
relation of heparin to (abstract) ..... 1948 **95** 283
relation of vitamin-K to (abstract) ..... 1949 **97** 240
*Protoplasmic constituents*, their origin and function ..... 1945 **88** 207
*Protoplasmic continuity* in Griffithsia globulifera (abstract) ..... 1950 **99** 350
*Protoplasmic cortex* changes during cell division (abstract) ..... 1950 **99** 341
in relation to stimulation ..... 1952 **103** 139
*Protoplasmic injury* substances and effect on the organism (abstract) ..... 1947 **93** 223
*Protoplasmic streaming* and action potential in Chara and Nitella (abstract) ..... 1941 **81** 296
some effects of centrifuging upon, in Elodea ..... 1949 **96** 246
*Protoplasmic viscosity* changes during mitosis in Chaetopterus egg. 1948 **95** 57
changes in different regions of the neuroblast during mitosis in grasshopper ..... 1946 **90** 109
of muscle and nerve (abstract) ..... 1949 **97** 245
*Protozoa*, effect of X-rays on respiration and nuclease activity .... 1953 **104** 351
heat sensitivity determination method for ..... 1952 **103** 364
lipid metabolism in (abstract) ..... 1947 **93** 228
*Protozoan flagella* studied with the electron microscope ..... 1947 **93** 114
*Protozoans*, oxygen consumption in single ..... 1952 **102** 178
*Protyrosinase* effect on morphological integrity in grasshopper eggs ..... 1941 **81** 388
*Psammechinus miliaris*, respiration of oöcytes and of eggs, fertilized and unfertilized ..... 1948 **95** 124
egg, respiration during cell division in ..... 1950 **98** 144
eggs, temperature coefficients of respiration in ..... 1949 **96** 107
*Pseudocentrotus*, sperm acrosome reaction to egg-water and other stimuli ..... 1952 **103** 54
*Pseudomys elegans*, agglutination of erythrocytes by viruses ..... 1952 **102** 149
*Ptyalin*, action on mating type substances ..... 1951 **101** 99
*Ptygura agassizi*, n. sp., description of ..... 1948 **94** 263
*Puerto Rican echinoderms*, ecological observations on ..... 1944 **87** 177
*Pumping rates* in Ciona intestinalis ..... 1951 **101** 84
in Mytilus californianus ..... 1953 **104** 171

*Pupae*, tyrosinase and the respiration of..... 1952 102 39
*Puto* sp., primitive chromosome cycle in..... 1944 87 167
*Pyruvate protection* against X-ray damage in Tetrahymena..... 1953 104 351
*Pyruvic phosphoferase*, distribution, potassium activation and mechanism of (abstract)..... 1952 103 314

## R

*Rabbit* fibrinogen solubility in plasma-ethanol mixtures..... 1951 101 171
red cells, potassium loss from (abstract)..... 1950 99 325
*Races* of oysters, physiologically distinct..... 1951 101 151
*Radiation sensitivity* and enzyme activity of enzyme-substrate films (abstract)..... 1948 95 283
*Radiation, ultraviolet, see* Ultraviolet
*Radiation, X-ray, see* X-ray; X-radiation; X-irradiation; Roentgen
*Radioactive calcium*, $Ca^{45}$, in measuring calcium deposition and turnover in the oyster..... 1953 104 398
in measurement of rate of shell formation..... 1952 103 269
*Radioactive iodine*, $I^{131}$, uptake of by algae..... 1953 104 138
uptake by Ascophyllum..... 1951 100 188
uptake, effects of anti-thyroid drugs on..... 1951 101 62
*Radioactive materials* in goldfish (abstract)..... 1947 93 225
*Radioactive phosphate*, distribution in eggs of Lytechinus (abstract) 1948 95 263
penetration into eggs of Strongylocentrotus and Urechis (abstract)..... 1948 95 262
uptake by Paramecium..... 1952 103 190
*Radioactive phosphorus*, $P^{32}$, effect on egg production and embryo survival in Habrobracon..... 1952 102 128
*Radioactive potassium*, $K^{42}$, effects of low temperature and cyanide on penetration into sea urchin eggs (abstract)..... 1948 95 252
*Radioactive sodium*, $Na^{24}$, permeability and exchange in frog eggs.. 1949 96 205
*Radioactive vanadium* uptake by tunicates..... 1951 101 84
*Radio-isotopes* in study of shell formation in molluscs..... 1952 102 9
*Radio-phosphorus*, effect on egg production and embryo survival... 1952 102 128
*Radio-resistance* of Habrobracon..... 1952 102 128
of Spisula gametes..... 1953 104 197
*Radio-sensitivity* and enzyme activity (abstract)..... 1948 95 283
of Arbacia eggs in various salt solutions..... 1943 85 193
of Arbacia sperm and effect of sea water (abstract)..... 1941 81 282
of diploid and haploid Habrobracon embryos..... 1952 103 170
*Radula protractor muscles* of Busycon, histology of..... 1942 82 190
*Rana catesbiana*, adult anterior pituitary hormone effect on tadpoles and immature males..... 1946 90 291
development of hybrids, studies in..... 1953 104 68
embryonic temperature tolerance and rate of development..... 1942 83 375
fibrinogen solubility in plasma-ethanol mixtures..... 1951 101 171
*Rana clamitans*, effects of anti-thyroid drugs on iodine uptake by thyroid gland of..... 1951 101 62
effects of parrot-fish thyroid on metamorphosis..... 1951 101 157

*Rana pipiens,* anaerobic ammonia production by gastrula explants of ..... 1952 102 22
effects of anti-thyroid drugs on uptake by thyroid ..... 1951 101 62
effects of fish and beef pituitary on water retention ..... 1952 102 25
embryonic respiratory metabolism ..... 1952 103 407
fibrinogen solubility in plasma-ethanol mixtures ..... 1951 101 171
*Rat,* effect of parrot-fish thyroid extract on respiratory metabolism. 1952 102 278
*Rat cells,* nuclear volumes, amount of intranuclear proteins and of DNA in ..... 1951 101 95
*Rats,* development of spermatozoa in (abstract) ..... 1949 97 230
transplantation and individuality differentials in inbred strains of ..... 1943 84 1
*Rate* of shell formation measurement by use of $Ca^{45}$ ..... 1952 103 269
*Rates* of feeding and oxygen uptake in filter-feeding marine invertebrates (abstract) ..... 1951 101 238
of regeneration in Tubularia, the interpretation thereof, and the significance of the independence of mass and time ..... 1944 87 227
*Reabsorption* of urea by smooth dogfish kidney ..... 1953 104 45
*Reagents* and the cortical responses of sea urchin egg ..... 1953 104 210, 216
*Recent experience* with hemoglobin-saline solutions (abstract) .... 1944 87 161
*Receptor population* and olfactory response in the blowfly ..... 1952 102 111
*Receptors,* tarsal, adaptation to chemical stimulation in the blowfly. 1952 103 178
*Reconstitution in Tubularia,* influence of temperature (abstract) .. 1941 81 300
pigmentation changes during ..... 1952 102 91
*Recordings* of high wing stroke and thoracic vibration frequency in some midges ..... 1953 104 439
*Red blood cells* of fish, studies on (abstract) ..... 1948 95 266
*Red cells.* Are –SH groups involved in the penetration of glycerol into these? (abstract) ..... 1947 93 199
*Red chromatophores* of Uca, studies on the physiology of ..... 1950 98 218
*Redox dyes,* effect on development of marine eggs (abstract) ..... 1949 97 255
intracellular oxidation by echinoderm oöcytes and embryos .... 1953 104 12
*Reduction* of T.T.C. by mitotically active and blocked embryonic cells ..... 1952 102 16
*Reference diver technique* ..... 1952 102 157, 178, 185
*Refertilization* of fertilized sea urchin eggs ..... 1951 101 335
*Regeneration* in amphibians (abstract) ..... 1950 99 351
in an earthworm, Eisenia foetida (Savigny, 1826):
I. Anterior regeneration ..... 1949 96 129
II. Posterior regeneration ..... 1950 98 36
III. Regeneration from both anterior and posterior transections, simultaneously ..... 1950 99 425
in early zooid of Amaroucium constellatum (abstract) ..... 1941 81 287
in isolated and fused pieces of Clava leptostyla ..... 1952 102 141
in Porophora viridis ..... 1948 94 184
in Tubularia crocea ..... 1942 82 243
in Tubularia ..... 1953 104 109
in Tubularia, as affected by covering the perisarc ..... 1942 83 416
in Tubularia, influence of ion concentration ..... 1942 82 243

of coenosarc fragments removed from Tubularia stem..... 1941 81 177
of tail and forelimb, indicator patterns in..... 1951 101 121
of the reproductive system in Holothuria parvula..... 1942 83 55
*Regular occurrence* of heteroploidy in a group of Pentatomidae (Hemiptera)..... 1945 88 63
*Regulation*, chloride ion, in crabs..... 1951 101 259
of spontaneous structural anomalies in Pelmatohydra..... 1952 103 104
*Relation between* olfactory response and receptor population in the blowfly..... 1952 102 111
water transport and food requirements in filter-feeding marine invertebrates..... 1952 103 356
*Relation of* depth to nitrogen tension in swim bladder of marine fishes..... 1951 101 178
of heparine to protoplasmic clotting (abstract)..... 1948 95 283
of temperature to oxygen consumption in goldfish..... 1948 94 66
of the plasma membrane to the vitelline membrane and jelly in the egg of Nereis limbata (abstract)..... 1948 95 264
*Relationship* between nuclear volumes, amount of intranuclear proteins and DNA, in various rat cells..... 1951 101 95
between paraphysis and paraventricular nucleus in Thamnophis..... 1951 101 106
between pre- and post-anaerobic oxygen tension and oxygen consumption in certain fresh water snails..... 1953 104 301
*Relationships*, serological, between the Mollusca and other invertebrates..... 1944 [illegible] 96
*Relative rate of penetration* of the lower fatty acids into beef red cells (abstract)..... 1948 95 245
into erythrocytes of the smooth dogfish (abstract)..... 1948 95 255
*Renal alkaline phosphatase*..... 1950 99 152
*Renal chloride excretion* by Mustelus canis (abstract)..... 1950 99 346
*Repellants*, fish..... 1953 104 28
*Replication* of substrate detail by barnacles and some other marine organisms..... 1948 94 161
*Report of investigations* on cholinesterase, summer of 1948..... 1948 95 278
*Report on Research Fellowships—see* Lalor
*Reports, annual*, of the Marine Biological Laboratory
*See* Marine Biological Laboratory
*Reproduction* and the lunar cycle, in Atlantic palolo worm (abstract)..... 1941 81 278
annual cycle in gonads of Phoronopsis..... 1953 104 182
asexual, in Botryllus schlosseri..... 1945 88 71
in Xiphophorus maculatus..... 1953 104 240
new method of, in Obelia..... 1948 95 94
of Dudresnaya crassa (Howe)..... 1950 99 272
of Lebistes..... 1952 102 30
of Sagitta elegans in relation to hydrographical conditions on Georges Bank..... 1943 85 201
without cross-copulation in Curtisia..... 1952 102 1

*Reproductive cycle* in Cyprina ..... 1953 104 146
in ring-necked pheasant, X-rays and the ..... 1944 87 134
of Neotoca bilineata ..... 1941 81 70
*Reproductive glands* in the Japanese beetle, Popillia japonica ..... 1950 99 49
*Reproductive organs* of the common marine shrimp, Penaeus setiferus Linn ..... 1948 94 244
*Reproductive potential* of a single clone of Pelmatohydra oligactis. 1950 99 285
*Reproductive rate* of algae after treatment with growth-affecting substances (abstract) ..... 1952 103 304
*Reproductive system* regeneration in Holothuria parvula ..... 1942 83 55
*Resistance* and acclimatization of marine fishes to temperature changes:
I. Experiments with Girella nigricans (Ayres) ..... 1942 83 219
II. Experiments with Fundulus and Atherinops ..... 1945 88 194
characteristics of injured nerves; current, voltage and (abstract) ..... 1944 87 158
of metallic silver to marine fouling ..... 1948 94 25
*Resistant house flies*, mechanism of synergistic action of DMC with DDT against ..... 1953 104 426
*Respiration* and cell division in egg of Urechis caupo ..... 1950 98 152
and growth in Tetrahymena geleii ..... 1942 82 423
and hemolysis of dogfish erythrocytes, action of toxins on ..... 1949 97 57
and iodine uptake in Ascophyllum ..... 1953 104 138
and water loss in blowfly and relation to physiological effect of DDT ..... 1949 97 64
*Respiration*, cellular; fractionation by narcotics (abstract) ..... 1941 81 282
cellular, the possible role of peroxidase in (abstract) ..... 1947 93 227
during cell division in egg of Psammechinus miliaris ..... 1950 98 144
effects of cyanide, arsenite and urethane upon ..... 1944 87 138
effects of ethyl alcohol on, in Pelomyxa ..... 1952 103 97
effect of food content and temperature on, in Pelomyxa ..... 1944 86 146
effects of X-ray irradiation upon, in Tetrahymena ..... 1953 104 351
growth and plant hormones ..... 1949 96 296
in brown algae (abstract) ..... 1950 99 370
in Mactra solidissima (abstract) ..... 1950 99 334
in sea urchin sperm (abstract) ..... 1950 99 324
in unicellular algae, time course studies, with time selection, using the platinum electrode (abstract) ..... 1949 97 271
independence of post- and pre-fertilization levels, in sea urchin egg ..... 1949 96 117
of a colorless flagellate ..... 1942 82 356
of Australorbis glabratus and other aquatic snails ..... 1948 95 199
of fresh water snails ..... 1953 104 301
of isolated blastomeres and polar lobes ..... 1951 101 47
of marine eggs, action of toxins upon ..... 1949 97 57
of oöcytes and eggs, fertilized and unfertilized, of Asterias and Psammechinus ..... 1948 95 124
of Platysamia pupae ..... 1952 102 39

of sea urchin sperm and eggs, as affected by hydrogen peroxide and irradiated sea water ... 1949 97 51
of sea urchin sperm as affected by X-rays ... 1949 97 44
of Spisula eggs ... 1951 101 228
of warm and cool spring fishes ... 1942 82 313
studies on developing grasshopper embryos ... 1953 104 1
temperature coefficients of, in Psammechinus eggs ... 1949 96 107
tissue, effects of Triturus toxin on ... 1942 83 137
*Respiratory gradients* in Tubularia ... 1953 104 109
*Respiratory inhibitors,* effects on melanophoral activity (abstract) . 1952 103 311
*Respiratory metabolism* during metamorphosis of normal and DDT-resistant house flies ... 1951 100 229
effect of parrot fish thyroid extract on, in white rat ... 1952 102 278
in fish ... 1950 99 213
of amphibian gastrula explants ... 1952 103 407
of excised teleost brain tissue ... 1953 104 445
of sinus glandless and eyestalkless land scrabs ... 1953 104 275
*Respiratory quotient* of Drosophila in flight ... 1947 93 229
*Respiratory rates* of chick blastoderm, comparison of (abstract) ... 1941 81 283
*Respiratory studies* of single cells:
I. Methods ... 1952 102 157
II. Oxygen consumption in single protozoans ... 1952 102 178
III. Oxygen consumption during cell division ... 1952 102 185
*Response* of luminous bacteria to sudden temperature increments and related experiments on drug action and protein denaturation (abstract) ... 1947 93 197
retinal electric, in Limulus ocelli ... 1951 101 114
*Retardation* of cell division by vitamin C in physiological concentrations ... 1948 94 79
*Retention* of water by frogs, effects of fish and beef pituitary on ... 1952 102 25
*Retina,* squid, photosensitive pigment of (abstract) ... 1949 97 248
*Retinal electric response* in Limulus ocelli ... 1951 101 114
*Retinal pigment,* hormonal regulation of, in Palaemonetes ... 1952 102 212
migration in grapsoid crabs, role of sinus glands ... 1948 95 169
migration in Leander serratus ... 1950 98 66
*Reversal* of cell division inhibition in Arbacia and Chaetopterus eggs ... 1953 104 263
temperature in Eristalis tenax, effect of illuminance upon ... 1951 100 84
*Reversible* contraction of protoplasmic structures by changes in pH values (abstract) ... 1952 103 306
sphering of erythrocytes (abstract) ... 1948 95 268
*Revision* of the family Umagillidae ... 1951 101 319
*Rhizoid formation* in Bryopsis ... 1951 101 300
*Rhizopod,* digestion of fat in ... 1942 83 320
*Rhizopus nigricans,* chemotropism in ... 1953 104 100
*Rhythmicity* of fiddler crab, studies of ... 1951 101 71
*Riboflavin-sensitized* photo-oxidations and their significance in plant physiology (abstract) ... 1949 97 270

*Ribonuclease* action on mating type substances of Paramecium calkinsi ..... 1951 101 99
activity in X-rayed Tetrahymena ..... 1953 104 351
new assay method for (abstract) ..... 1951 101 212
*Ribonucleases* of liver and kidneys, a comparative study (abstract) 1952 103 288
*Ribonucleic acid* at cell surfaces and its possible significance (abstract) ..... 1949 97 263
*Ribonucleic and desoxyribonucleic acids,* nuclear precursor to (abstract) ..... 1948 95 244
*Ricin denaturation* (abstract) ..... 1950 99 323
*Rigidity* of protoplasmic cortex, effects of various agents upon .... 1952 103 139
*Roentgen radiation,* effect on jelly of Nereis zygote (abstract) .... 1941 81 298
*Role of slime film* in the attachment of fouling organisms ..... 1948 94 143
*Role of the sinus glands* in retinal pigment migration ..... 1948 95 169
*Rotatoria* from Penikese Island, Mass., with a description of Ptygura agassizi, n. sp. ..... 1948 94 263
*Rotenone antagonists,* chemical characteristics of (abstract) ..... 1952 103 298
*Rotenone potency* in inhibition of division in sea urchin eggs (abstract) ..... 1951 101 227
*Rotifer,* increase of cortical calcium in ..... 1942 82 392

## S

*Saccharomyces cerevisiae,* influence of glycolysis on the sodium and potassium content (abstract) ..... 1949 97 260
*Saccoglossus (Dolichoglossus) kowalevskyi* blastomere and fertilization reaction in egg of (abstract) ..... 1949 97 237
*Sagitta elegans,* distribution and reproduction on Georges Bank ... 1943 85 201
*Salamander larvae,* analysis of pigment suppression in ..... 1951 100 127
*Salamanders,* histology of pituitary and thyroid, after treatment with thyroid inhibitors ..... 1953 104 250
*Salinity,* depressed, gametogenesis in the oyster under ..... 1949 96 263
*Salivary chromosome* manipulation ..... 1946 90 71
*Salivary gland,* factors influencing growth and metamorphosis of, in Drosophila ..... 1943 84 13
study of chromosome ends in nuclei of ..... 1945 88 144
*Salivary glands,* function of, in Drosophila and other flies (abstract) 1952 103 285
influence of temperature on synapsis in ..... 1952 103 67
*Salmonella aertrycke,* biochemical properties of a succinoxidase from (abstract) ..... 1949 97 222
*Salmonella typhimurium,* mutations in biochemical requirements of (abstract) ..... 1949 97 221
*Salts,* effect of, on migration time of slime mold ..... 1952 102 273
*Samia cecropia* (Linn.) gustatory rejection thresholds for the larvae of ..... 1945 88 37
*Sand crabs,* pelagic larval stages of ..... 1942 83 67
*Sand dollar eggs,* a comparison of the energy requirements of, with those of sea urchin eggs (abstract) ..... 1947 93 200
*Saponin,* action of ..... 1951 100 1

*Scattering layer* relationship to Euphausiacea..... 1950 **99** 181
*Schistocerca americana*, effect of calcium on isolated muscle fibers. 1952 **103** 421
*Schooling fish*, effect of chemicals on..... 1953 **104** 28
*Sciara* (Diptera), resistance to mutagenic effects of radiation..... 1949 **97** 311
*Sciara larvae*, physiology of tracheal filling (abstract)..... 1949 **97** 267
tracheal filling in..... 1949 **97** 323
*Scleroproteins*, comparative studies on (abstract)..... 1952 **103** 315
*Scomber scombrus*, agglutination of erythrocytes by viruses..... 1952 **102** 149
*Scyphomedusa*, form and growth in the development of..... 1949 **96** 283
*Sea anemones*, xanthophylls and carotenes of..... 1944 **86** 169
*Sea cucumber*, regeneration of the reproductive system..... 1942 **83** 55
*Seagulls*, electrographic observations on (abstract)..... 1949 **97** 243
*Sea slug*, Hopkinsia rosacea..... 1949 **97** 206
*Seasonal and annual variations* in the attachment and survival of barnacle cyprids..... 1948 **94** 236
*Sea urchin*, Diadema antillarum (Philippi), sensitivity to light (abstract)..... 1950 **99** 329
*Sea urchin* (Arbacia), cyto-embryological studies..... 1952 **102** 58, 74
fertilizin, mucin clot reaction with..... 1949 **96** 74
fertilized ova, effects of necrosin on cleavage (abstract)..... 1949 **97** 244
gametes, photoreactivation in..... 1950 **99** 163
ribonucleinase activity in development (abstract)..... 1949 **97** 255
sperm, effect of X-ray irradiation on respiration of..... 1949 **97** 44
sperm and eggs, effects of hydrogen peroxide and X-ray irradiated sea water on respiration of..... 1949 **97** 51
sperm, reaction of acrosome of, to egg-water and other stimuli. 1952 **103** 54
sperm, respiration and fertilizing capacity (abstract)..... 1950 **99** 324
*Sea urchin egg*, accumulation of phosphate and evidence for synthesis of adenosine triphosphate (abstract)..... 1949 **97** 225
a comparison of the energy requirements of the sand dollar egg with (abstract)..... 1947 **93** 200
cortical response of..... 1953 **104** 210, 216
effects of halogenated alkyl amines on division..... 1952 **103** 44
fertilizin and antifertilizin in fertilization of..... 1941 **81** 190, 364
independence of post-fertilization respiration from level of respiration before fertilization..... 1949 **96** 117
pH changes on the surface potentials of..... 1947 **93** 259
phosphagen in fertilization of (abstract)..... 1950 **99** 316
refertilization of fertilized..... 1951 **101** 335
relation between the zeta potential and adhesiveness of the cell membrane..... 1947 **93** 274
and sperm, treatment with metal-chelating agents..... 1953 **104** 224
(*See* also titles listed under Arbacia, etc.)
*Sea water*, decomposition and regeneration of nitrogenous organic matter in..... 1941 **81** 63 1942 **83** 273
effect on radio-sensitivity of Arbacia sperm (abstract)..... 1941 **81** 282
hypo- and hypertonic; effects on rate of breaking of centrifuged Arbacia egg..... 1943 **85** 141

nitrogen tension in ... 1951 101 178
removal of vanadium from by ascidians ... 1951 101 84
tolerance of stenohaline forms to dilution of (abstract) ... 1949 97 232
*Secale cereale*, plastid development in the scutellum (abstract) ... 1947 93 211
*Secretion* of mucus in Busycon, cytological studies on ... 1952 102 252
*Sedimentation* constant of hemerythrin (abstract) ... 1951 101 227
*Segregation*, seasonal, and hybridization in two races of a butterfly ... 1943 85 44
*Selective mechanism* in Escherichia coli (abstract) ... 1951 101 203
*Seminal fluid factor* in sperm respiration (abstract) ... 1949 97 259
*Sense plate* of honeybee antennal cuticle ... 1952 103 201
*Sensitization* and activation reactions in Nereis eggs, chemical aspects of ... 1948 95 333
*Sensory areas* in the avian inner ear, independent differentiation of ... 1943 84 252
*Sera*, human normal, agglutination of fish erythrocytes by ... 1952 103 328
*Serial publications*, list of: *see* Marine Biological Laboratory Library
*Serological analysis* of the systematic position of Geryon quinquedens ... 1951 100 44
*Serological comparisons* of astacuran crustaceans ... 1952 103 433
*Serological relationships* between the Mollusca and the other invertebrates ... 1944 87 96
*Serological systematics* of some palinuran and astacuran crustaceans 1950 98 122
*Serology*, comparative, of some Crustacea, and studies in hemocyanin correspondence ... 1949 97 273
a study of, in avian relationships ... 1942 83 205
systematic, among certain insect species ... 1947 93 64
*Sesarma*, chromatophorotropic hormones in ... 1951 100 28
sources and activities of two chromatophorotropic hormones ... 1951 101 241
*Sex determination* and differentiation in Stegophryxus hyptius (Thompson) ... 1949 96 17
*"Sexing"* of Arbacia, electrical method for (abstract) ... 1952 103 284
*Sex-linkage* of stubby (sb) in Habrobracon (abstract) ... 1941 81 298
*Sex phases* in wood-boring mollusks ... 1941 81 168
*Sex production reversal* in Micromalthus ... 1941 81 420
*Sex trivalent* reorientation within the spindle, in mantid ... 1949 97 300
*Sexual changes* and growth in Crepidula plana (abstract) ... 1949 97 239
*Sexual cycle* and manganese accumulation in Ostrea (abstract) ... 1941 81 278
of Teredo navalis ... 1942 82 438
*Sexual cycles* in crayfish, factors influencing ... 1948 95 229
*Sexual reproduction* without cross-copulation, in Curtisia ... 1952 102 1
*Shape changes* in Saccoglossus egg (abstract) ... 1951 101 221
*Shell formation* in molluscs ... 1952 102 9
studies on:
I. Measurement of the rate ... 1952 103 269
II. A mantle shell preparation for ... 1953 104 394
III. Measurement of calcium deposition and turnover ... 1953 104 398
*Shipworm*, Teredo navalis, sexual cycle of ... 1942 82 438

*Shock* produced by hemorrhage, peripheral circulatory changes during (abstract) ..... 1944 87 161
*Shrimp,* Penaeus setiferus Linn., early stages in the life history of. 1949 96 168
*Significance* of the dark period in the photoperiodic response of male juncos and white-throated sparrows ..... 1952 103 345
*Silkworms,* effects of temperature gradients on pupal-adult transformation ..... 1942 82 347
*Silver,* hemolytic effects of (abstract) ..... 1948 95 268
metallic, resistance to marine fouling ..... 1948 94 25
*Single cells,* respiratory study, methods for ..... 1952 102 157
*Single protozoans,* oxygen consumption in ..... 1952 102 178
*Sinus gland* extirpation effect on respiratory metabolism of land crab ..... 1953 104 275
extract effect on certain enzyme systems (abstract) ..... 1947 93 198
in crustacea, histogenesis and cyclic phenomena of ..... 1943 85 87
method for removal from the eyestalks of crustaceans ..... 1947 93 52
of brachyuran crustaceans, history of ..... 1952 103 157
principle in the fiddler crab, ovarian inhibition by ..... 1949 96 228
X-organ complex, role in molting process of fiddler crab ..... 1953 104 115
*Sinus glands,* influence on gastrolith formation in crayfish ..... 1942 82 68
role in retinal pigment migration in grapsoid crabs ..... 1948 95 169
*Siphodera vinaledwardsii,* life history of (abstract) ..... 1941 81 279
*Sipunculus nudus,* coelomic pressures in ..... 1950 98 161
*Size* of cells, variations during development of slime molds ..... 1953 104 297
of the mesh openings in mucous feeding nets of marine animals. 1945 88 107
relation of, to oxygen consumption in protozoans ..... 1952 102 178
*Skeletal muscle,* studies on rigor resulting from thawing of frozen muscles (abstract) ..... 1949 97 270
*Slime mold,* effect of salts and organic solutes on migration time of. 1952 102 273
*Slime molds,* analysis of aggregation stage in development:
I. Distribution of capacity to initiate aggregation ..... 1952 103 259
II. Aggregative center formation ..... 1952 103 446
varieties in cell size during development ..... 1953 104 297
*Smooth muscle,* depolarization and contraction on rapid cooling (abstract) ..... 1952 103 302
frequency dependence of mechanical properties of (abstract) .. 1952 103 293
*Snails* (Australorbis glabratus and others), respiration of ..... 1948 95 199
*Snails, freshwater,* anaerobic metabolism and aerobic carbohydrate consumption ..... 1950 98 266 1951 100 199
oxygen consumption and oxygen tension in ..... 1953 104 301
*Snapping shrimp,* Crangon and Synalphaeus; role in the production of underwater noise in the sea ..... 1947 93 122
*Society of General Physiologists:* Papers presented at the meetings of: *see* Abstracts
*Sodium* and potassium, interaction with hemoglobin and hemerythrin (abstract) ..... 1951 101 215
azide effects on the rate of amphibian development (abstract). 1947 93 213
choleinate, cortical response to, of sea urchin egg ..... 1953 104 210
content of the yeast cell (abstract) ..... 1950 99 319

content of yeast and of Arbacia egg, as influenced by glycolysis (abstract) ... 1949 97 260
dodecyl sulfate, hemolytic effect of (abstract) ... 1948 95 269
ion effect on metamorphosis of Bugula larvae ... 1952 103 369
ions, exposure to, of eggs and larvae of Arbacia and Asterias ... 1943 84 213
radioactive, permeability and exchange in frog eggs ... 1949 96 205
taurocholate, hemolytic action of (abstract) ... 1947 93 202
*Solubilities* of some vertebrate fibrinogens in plasma-ethanol mixtures ... 1951 101 171
*Solubility* of the components of the Nereis egg (abstract) ... 1950 99 362
of the vitelline membrane of Nereis eggs (abstract) ... 1948 95 269
*Some effects of centrifuging* upon protoplasmic streaming in Elodea ... 1949 96 246
*Some observations* on the Golgi material in larval epidermal cells of Drosophila ... 1948 95 163
*Sources and activities* of two chromatophorotropic hormones in crabs of the genus Sesarma:
I. Experimental analyses ... 1951 100 28
II. Histology of incretory elements ... 1951 101 241
*Sparrows*, white-throated; significance of dark period in photoperiodic response of males ... 1952 103 345
*Spat*, oyster, food and feeding of ... 1953 104 334
*Spawn*, accumulation and discharge of by oysters ... 1942 82 413
*Spawning* in winter, and breeding larvae (V. mercenaria) in the laboratory ... 1950 98 60
of oysters, temperature requirements for ... 1952 103 80
of Phoronopsis ... 1953 104 182
of Thyone briareus (Lesueur) ... 1948 95 296
synchronous, in Hydractinia and Pennaria ... 1942 82 329
*Species-specificity* of fish erythrocyte antigens ... 1952 103 328
*Specificity* and host-relations in Zoögonus ... 1941 81 205
in the fusion of stolons in hydroids (abstract) ... 1948 95 261
of steroids which inhibit heart-beat (abstract) ... 1951 101 199
*Spectral analysis*, photochemical, of neural tube formation ... 1944 87 73
*Spectro-photometric observations* on nerves (abstract) ... 1950 99 327
*Spectroscopic observations* on cytochrome oxidase and its reaction with carbon monoxide (abstract) ... 1950 99 317
*Sperm*, action of DN-ase on ... 1952 103 319
agglutination, the pre-zone phenomenon in ... 1949 97 95
agglutinins in egg jelly of Rana clamitans and R. pipiens (abstract) ... 1952 103 285
cycle in Triturus viridescens, effect of environmental factors upon ... 1942 83 111
effects of X-rays on ... 1953 104 197
entrance in echinoderms ... 1950 99 399
extracts, effects on eggs of Mytilus edulis ... 1950 98 128
fox, oxygen consumption of ... 1942 83 353
metabolism, usnic acid and (abstract) ... 1948 95 286
of sea urchin, respiration and fertilizing capacity of (abstract) 1950 99 324

of sea urchin, treatment with metal-chelating agents..... 1953 104 224
respiration; sulfhydryl inhibitors and the seminal fluid factor in (abstract)..... 1949 97 259
*Spermatocytes* of grasshopper, anaphase movement of chromosomes in..... 1949 96 90
*Spermatogenesis* in sphecoid wasps (abstract)..... 1947 93 218
*Spermatozoa* development in albino rats (abstract)..... 1949 97 230
effects of egg water and other stimuli on the acrosome..... 1952 103 54
extension of functional life span (abstract)..... 1950 99 324
penetration of membrane of self-inseminated eggs..... 1942 82 455
*Spermatozoön* of Arbacia punctulata as shown by the electron microscope..... 1943 85 151
*Sphyraena argentia* pituitary effects on water retention by frogs... 1952 102 25
*Spiders*, mechanism of extension in the legs of..... 1944 86 41
*Spindle* development and behavior in the giant amoeba..... 1948 94 169
figure and chromosome movement; hydrostatic pressure effects upon..... 1946 91 145
isolation and chemical characterization of (abstract)..... 1952 103 283
material studies (abstract)..... 1950 99 369
*Spinning glands* of Habrobracon larvae, procedures for mounting whole (abstract)..... 1950 99 358
*Spiny dogfish*, Acanthias vulgaris, development of the spiracular cartilages of..... 1947 93 287
*Spiracular cartilages* of the spiny dogfish, development of..... 1947 93 287
*Spiracles*, experiments on (abstract)..... 1950 99 315
*Spiral cleavage* (*see* Erratum, 361) (abstract)..... 1948 95 265
*Spirocodon saltatrix*, fertilization in..... 1950 99 412
*Spisula* (Mactra) gametes, effects of X-rays on..... 1953 104 197
ova, survival of (abstract)..... 1952 103 309
visible response to stimulation (abstract)..... 1952 103 283
(Note: further items cited under Clam and/or Mactra)
*Squalus acanthias* (Linn.), reproduction of..... 1947 92 187
stages in the development of..... 1945 88 220
structures concerned with yolk absorption (abstract)..... 1941 81 292
*Squid*, activity of chromatophores in (abstract)..... 1951 101 233
ATP-ase localization in the giant nerve fiber of (abstract)... 1947 93 219
axon, micro-injection with calcium chloride (abstract)..... 1950 99 344
axon structure (abstract)..... 1950 99 345
axoplasm, enzyme distribution in (abstract)..... 1950 99 356
axoplasm of the giant nerve, shape of oil drops injected into the (abstract)..... 1947 93 191
embryos; developmental changes in viability after subjection to cyanide..... 1948 94 45
excretion in (abstract)..... 1951 101 224
extraction of purified "visual purple" (abstract)..... 1948 95 242
giant axon, changes in light emerging from, during activity (abstract)..... 1951 101 213
giant axon, measurement of birefringence changes due to electrical polarization (abstract)..... 1951 101 229

giant axon, rectifying property of (abstract) ... 1941 81 277
giant nerve fiber, pH determinations in (abstract) ... 1951 101 233
giant nerve fiber, permeability to ions (abstract) ... 1948 95 242
larval tropisms, effects of X-rays ... 1950 98 247
nerve, oxygen consumption of (abstract) ... 1952 103 315
nervous tissue, cytochrome oxidase and succinic dehydrogenase content of ... 1951 100 159
opalescent, pigments of ... 1942 82 284
retina, photosensitive pigment of (abstract) ... 1949 97 248
*Stages* in the development of the picked, or spiny dogfish, Squalus acanthias (Linn.) ... 1945 88 220
*Staining* of protein with mercuric bromphenol blue ... 1953 104 57
procedures for whole mounts of the spinning glands of Habrobracon larvae (abstract) ... 1950 99 358
vital, in ultraviolet and in white light, combined (abstract) ... 1948 95 238
*Starfish* egg, effects of podophyllin on maturation and cleavage (abstract) ... 1947 93 214
egg metabolism and fertilization (abstract) ... 1941 81 278
sperm agglutination by fertilizin ... 1945 89 84
*Starvation studies* with Habrobracon ... 1950 99 65, 359
*Statistical studies* on the interphasic growth of the nucleus ... 1949 97 187
*Stegophryxus hyptius* (Thompson), determination and differentiation of sex ... 1949 96 17
*Stenohaline forms* in diluted sea water (abstract) ... 1949 97 232
*Stentor coeruleus*, homoplastic grafting in ... 1951 100 116
phosphatases in normal and reorganizing stages ... 1949 97 108
*Stichopus californicus*, pharmacology of the haemal vessels ... 1952 102 249
*Stimulating reagents*, analysis of cortical response to, in the sea urchin egg ... 1953 104 210, 216
*Stimulation*, adaptation to, of blowfly tarsal receptors ... 1952 103 178
by intense flashes of ultraviolet light (abstract) ... 1941 81 291
movements of organisms toward or away from source of (abstract) ... 1949 97 271
protoplasmic cortex in relation to ... 1952 103 139
*Stolons*, specificity in fusion of, in hydroids (abstract) ... 1948 95 261
*Stratification* and breaking of the Arbacia egg when centrifuged in single salt solutions ... 1945 89 72
and deformation of Arbacia eggs centrifuged in caffeine solutions ... 1949 96 70
*Streptomycin-induced* chlorophyll-less races of Euglena (abstract) . 1948 95 260
*Stretch effects* on conduction in single nerve fibers (abstract) ... 1950 99 320
*Striations and myosin* in muscle ... 1946 90 32
*Stroboscopic analysis* of flight sounds of Drosophila ... 1950 99 300
*Stroke amplitude* as a function of air density in flight of Drosophila. 1951 100 15
*Strongylocentrotus dröbachiensis;* incidence, distribution in the host, and division of ciliates in ... 1948 94 99
*Strongylocentrotus pulcherrimus*, cortical response of eggs to stimulating reagents ... 1953 104 210, 216
means of fixation of blastomere positions in larvae ... 1952 102 58

reaction of sperm acrosome to egg water and other stimuli.... 1952 **103** 54
studies on the blastula stage of..... 1952 **102** 74
*Strongylocentrotus purpuratus* gametes, treatment of with metal-chelating agents..... 1953 **104** 224
gradient patterns in oöcytes and embryos..... 1953 **104** 12
photoreactivation in..... 1950 **99** 163
uptake and loss of $K^{42}$ (abstract)..... 1949 **97** 251
*Structural anomalies* and their regulation, in Pelmatohydra..... 1952 **103** 104
*Structure*, bivalent, in the meiosis of male mantids..... 1943 **85** 265
of fibrin clots (abstract)..... 1949 **97** 227
of insect peritrophic membranes..... 1952 **103** 384
of insulin and the cyclol hypothesis (abstract)..... 1949 **97** 229
of meiotic chromosomes in grasshopper; bearing on the nature of "chromomeres" and "lamp-brush chromosomes"..... 1945 **89** 242
*Studies*, electro-kinetic (*see* Marine ova)
*Studies* in the regulation of blood sugar concentration in crustaceans:
I. Normal values and experimental hyperglycemia in Libinia emarginata..... 1949 **96** 218
II. Experimental hyperglycemia and the regulatory mechanisms..... 1950 **99** 454
in the physiology of commensalism:
I. The polynoid genus Arctonoë..... 1950 **98** 81
II. The polynoid genera, Arctonoë and Halosydna..... 1951 **100** 71
of the chemical form of $P^{32}$ after entry into the Arbacia egg (abstract)..... 1948 **95** 262
of the daily rhythmicity of the fiddler crab Uca pugnax. Modification by photoperiod..... 1951 **101** 71
on arthropod cuticle:
II. Electron microscope study of extracted cuticle..... 1948 **94** 212
VIII. The antennal cuticle of honeybees, with particular reference to the sense plates..... 1952 **103** 201
on basophilia of nucleic acids. The methyl green effect..... 1952 **103** 145
on cell differentiation: the role of auxin in algae; with particular reference to rhizoid formation in Bryopsis..... 1951 **101** 300
on ciliates of the family Ancistrocomidae, Chatton and Lwoff:
I. Hypocomina tagularum sp. nov. and Crebricoma gen. nov. 1946 **90** 1
II. Hypocomides mytili C. and L.; H. botulae sp. nov.; H. parva sp. nov.; H. kelliae sp. nov. and Insignicoma venusta gen. nov., sp. nov..... 1946 **90** 200
III. Ancistrocoma pelseneeri C. and L.; A. dissimilis sp. nov. and Hypocomagalma pholadidis sp. nov..... 1946 **91** 189
IV. Heterocineta janickii Jarocki; H. goniobasidis sp. nov.; H. fluminicolae sp. nov. and Enethecoma properans Jarocki..... 1946 **91** 200
on marine bryozoa:
I. Aeverrillia setigera (Hincks) 1887..... 1945 **89** 201
II. Barentsia laxa (Kirkpatrick) 1890..... 1948 **94** 128

III. Woods Hole region bryozoa, associated with algae..... 1949 96 32
IV. Nolella blakei sp. nov..... 1949 97 158
on shell formation:
I. Measurement of the rate of shell formation by use of $Ca^{45}$. 1952 103 269
II. A mantle-shell preparation for in vitro studies..... 1953 104 394
III. Measurement of calcium deposition in the shell and calcium turnover in mantle tissue, using the mantle-shell preparation and $Ca^{45}$..... 1953 104 398
on the acrosome:
I. Reaction to egg water and other stimuli..... 1952 103 54
on the biochemistry of Tetrahymena:
IV. Amino-acids and their relation to the biosynthesis of thiamine..... 1945 89 131
VII. Riboflavin, pantothen, biotin, niacin and pyridoxine in the growth of T. geleii..... 1945 89 229
on the chemical basis of fever (abstract)..... 1944 87 163
on the development of frog hybrids:
IV. Competence of gastrula ectoderm in androgenetic hybrids..... 1953 104 68
on the distribution of vitamin $B_t$ (carnitine)..... 1953 104 359
on the elasmobranch kidney:
II. Reabsorption of urea by the smooth dogfish..... 1953 104 45
on the flagella of algae:
I. General observations on Chlamydonomas moewusii..... 1952 103 74
on the pigmentation changes during reconstitution in Tubularia 1952 102 91
on the thermal death of Hyalella azteca (Saussure)..... 1949 96 123
*Study* of effects of X-rays on Spisula gametes..... 1953 104 197
*Stycla partita,* cross- and self-fertilization in..... 1942 82 161
metamorphosis in (abstract)..... 1944 87 166
penetration of spermatozoa into membrane of the self-inseminated eggs..... 1942 82 455
vanadium content of..... 1951 101 84
*Stylactis,* a new form of the hydroid (abstract)..... 1947 93 206
*Sub-cooling* for cells under examination at room temperature (abstract)..... 1947 93 226
*Sub-microscopic structure* of the cortical layer of fertilized and parthenogenetic sea urchin eggs..... 1947 92 151
*Substrate-enzyme orientation* during embryonic development..... 1945 88 254
*Sub-zero temperatures,* effect on Drosophila..... 1949 97 150
*Succinic dehydrogenase,* comparison of reactions with sodium adipate and sodium malonate (abstract)..... 1952 103 300
content of islet tissues of the toadfish (abstract)..... 1950 99 361
content of squid axoplasm and other nervous tissues (abstract) 1950 99 356
content of toadfish and rat kidneys (abstract)..... 1950 99 356
in squid nervous tissues..... 1951 100 159
in toadfish islet tissue..... 1951 100 191
*Succinoxidase* from Salmonella aertrycke, properties of (abstract). 1949 97 222
*Sucker,* freezing point of urine of..... 1942 83 363

*Sucrose*, depressant action on fly cholinesterase..... 1953 104 323
utilization by Colpidium campylum (abstract)..... 1949 97 261
*Suctorian, Tokophrya infusionum*, activity of contractile vacuole.. 1951 100 49
*Sudan black B technique*, in study of heterochromatin in certain plant nuclei (abstract)..... 1949 97 236
used to determine toxicity responses of dividing Allium nuclei (abstract)..... 1949 97 235
*Sugars*, effects of on turtle erythrocytes..... 1949 96 9
utilization by Drosophila..... 1948 95 114
*Sulfanilamide* effects on grasshopper embryos..... 1950 98 94
effects on uptake of $I^{131}$ by frog thyroid..... 1951 101 62
*Sulfhydryl* groups, reaction with alloxan (abstract)..... 1948 95 276
inhibitors and a seminal fluid factor in sperm respiration (abstract)..... 1949 97 259
metabolism of the beta cell and its relationship to the development of diabetes (abstract)..... 1948 95 239
*Superficial gel layer* and its role in development (abstract)..... 1944 87 154
*Surface angle*, influence in the attachment of barnacles and other organisms..... 1942 82 14
*Surface illumination* and barnacle attachment..... 1948 94 33
*Suspension media*, effect on activity of fly cholinesterase..... 1953 104 323
*Swim-bladder* gas composition in deep sea fishes..... 1953 104 75
gas content in relation to hydrostatic pressure..... 1942 82 138
nitrogen tension in..... 1951 101 178
*Swordfish*, broad-billed, hypophysis of..... 1942 82 401
*Synapses*, non-integrative (abstract)..... 1948 95 249
*Synapsis*, in hybrid salivary glands; influence of temperature upon. 1952 103 67
*Syndesmis*, a new species of..... 1951 101 319
*Synergistic action mechanism* of DMC with DDT against resistant house flies..... 1953 104 426
*Synthesis* of adenosinetriphosphate (ATP) in the fertilized sea urchin egg (abstract)..... 1949 97 225
of carnitine in insects..... 1953 104 359
of lipids from proteids in Colpidium campylum (abstract)..... 1947 93 214
of thiamin by Glaucoma piriformis..... 1944 86 31
of thiamin by Tetrahymena. 1941 81 285 1944 87 121 1945 89 131
reactions with acetic acid in isolated bone marrow (abstract). 1948 95 284
*Systematic relationship* of Geryon quinquedens, a serological analysis of..... 1951 100 44

## T

*Tadpoles* and the activity of "saponin cholesteride"..... 1951 100 1
*Tail*, indicator patterns in regeneration of, in larvae of Triturus torosus..... 1951 101 121
*Tamalia*, a quantitative study of the anaphase movement in..... 1943 85 164
*Tantalum* reactions in frog tadpole cells (abstract)..... 1949 97 223
*Tarsal receptors* of blowfly, adaptation to chemical stimulation.... 1952 103 178
*Tautog*, equilibrium between hemoglobin and oxygen of whole and hemolyzed blood..... 1941 81 307

*Tautoga onitis* (Linn.), effect of carbon dioxide and lactic acid on whole and hemolyzed blood ..... 1943 **84** 207
erythrocytes, agglutination by viruses ..... 1952 **102** 149
heat produced by respiring whole blood (abstract) ..... 1941 **81** 305
*Tautogolabrus adspersus,* melanophore control (abstract) ..... 1941 **81** 300
*Taxonomy* of genus Eugymnanthea ..... 1951 **101** 162
*Teleosts, marine,* comparative study of the respiratory metabolism of excised brain tissue of ..... 1953 **104** 445
phosphatase activity in the kidneys of ..... 1950 **99** 152
*Temporal variations* in histological appearance of the thyroid and pituitary of salamanders treated with thyroid inhibitors ..... 1953 **104** 250
*Temperature* acclimatization in goldfish ..... 1950 **99** 416
alteration of carbamate narcosis of dividing eggs (abstract) ... 1950 **99** 338
body, of bats ..... 1951 **101** 289
body, of white-footed mice ..... 1953 **104** 87
change effect on the oxygen consumption of yeast (abstract) .. 1947 **93** 227
coefficients of apyrase systems from muscles of different animals (abstract) ..... 1948 **95** 287
of respiration in Psammechinus eggs ..... 1949 **96** 107
cytological effects on fertilized eggs of Chaetopterus (abstract) 1949 **97** 258
effects on denaturation of ricin (abstract) ..... 1950 **99** 323
effects on Drosophila ..... 1949 **97** 150
effects on erythrocyte permeability (abstract) ..... 1950 **99** 325
effects on growth and sexual changes in Crepidula (abstract) . 1949 **97** 239
effect on population development of Daphnia ..... 1943 **85** 116
effects on rate of disappearance of caudal bands in Fundulus .. 1944 **86** 154
effects on respiration in Pelomyxa ..... 1944 **86** 146
embryonic, tolerance and rate of development in Rana ..... 1942 **83** 375
extreme, effect on volume and physical properties of allantoic and amniotic fluids ..... 1943 **84** 141
gradients, effects on pupal-adult transformation of silkworms .. 1942 **82** 347
influence on reconstitution in Tubularia (abstract) ..... 1941 **81** 300
influence on synapsis in hybrid salivary glands ..... 1952 **103** 67
influence upon oxygen consumption of a larval Eustrongylides . 1943 **84** 148
morphological effects on fertilized eggs of Chaetopterus (abstract) ..... 1949 **97** 256
normal and extreme, effects on volume and physical properties of allantoic and amniotic fluids ..... 1943 **84** 141
requirements for maturation of gonads of northern oysters .... 1952 **103** 80
sensitivity of protozoa, method for its determination ..... 1952 **103** 364
shock experiments on embryos of Triturus torosus ..... 1950 **98** 1
*Tenebrio molitor,* nutritive requirements of larvae ..... 1942 **83** 428
use of in bio-assay of carnitine ..... 1953 **104** 359
*Tension,* nitrogen, in swim-bladder of marine fishes ..... 1951 **101** 178
relation between ATP and tension in cross-striated muscle .... 1949 **96** 162
*Teredo navalis,* development of primary gonads and differentiation of sexuality ..... 1943 **84** 178
sexual cycle of ..... 1942 **82** 438

*Testicular cells*, studies on degeneration in immature mammals (abstract) ..... 1949 **97** 229
*Testis size* in birds as a factor of light ..... 1952 **103** 345
*Tetra-ethylammonium bromide*, action on Venus heart ..... 1952 **102** 48
*Tetrahymena geleii* (Fergason), and thiamine synthesis ..... 1944 **87** 121
biochemical factors in maximal growth ..... 1944 **87** 107
biochemistry of ..... 1945 **89** 131, 229
effect of radiation on nuclease activity and respiration ..... 1953 **104** 351
improved culture conditions for (abstract) ..... 1952 **103** 301
normal growth and respiration ..... 1942 **82** 423
oxygen consumption and carbon dioxide elimination ..... 1947 **92** 210
phosphatase activity in ..... 1950 **99** 357 1951 **100** 165
phosphate uptake by (abstract) ..... 1950 **99** 335
respiration and enzyme studies on irradiated (abstract) ..... 1952 **103** 300
sensitivity to heat, determination by most probable number method ..... 1952 **103** 364
*Thamnophis*, relationship between paraphysis and paraventricular nucleus in ..... 1951 **101** 106
*Thecal morphology* of some dinoflagellates of Woods Hole, with special reference to the "ventral area" (abstract) ..... 1947 **93** 210
*Theobromine effects* on rate and form of development (abstract) ... 1949 **97** 234
*Theophylline* effects on rate and form of development (abstract) .. 1949 **97** 234
influence on absorption of Mg salts from the gastro-intestinal canal (abstract) ..... 1948 **95** 254
*Theory* of metachromatic staining (abstract) ..... 1944 **87** 155
*Thermal death* of Hyalella azteca (Saussure) ..... 1949 **96** 123
*Thermodynamic theory* of the contraction of actomyosin (abstract) 1948 **95** 285
*Thiamine* and Tetrahymena ..... 1944 **87** 121
synthesis by ciliates, possibility of (abstract) ..... 1941 **81** 285
synthesis by Glaucoma piriformis ..... 1944 **86** 31
synthesis by Tetrahymena ..... 1944 **87** 121
*Thiocyanate*, effects on uptake of $I^{131}$ by frog thyroid ..... 1951 **101** 62
*Thiouracil*, effect on oxygen consumption of embryonic cells ..... 1949 **96** 1
*Thiourea*, effect on histology of salamander thyroid and pituitary .. 1953 **104** 250
effect on oxygen consumption of embryonic cells ..... 1949 **96** 1
effect on uptake of $I^{131}$ by frog thyroid ..... 1951 **101** 62
*Thiourea and phenylthiourea*, effects upon the development of Eleutherodactylus ricordii ..... 1948 **94** 1
*Thoracic vibration frequency* in some midges ..... 1953 **104** 439
*Thorax* movements in insect flight ..... 1951 **100** 95
*Thyone briareus* (Lesueur), pigmentation and coelomic fluid (abstract) ..... 1950 **99** 343
spawning of ..... 1948 **95** 296
*Thyroid gland*, effects of anti-thyroid drugs on $I^{131}$ uptake by ..... 1951 **101** 62
chick, radio-iodine uptake by (abstract) ..... 1952 **103** 289
*Thyroid* histology in salamanders treated with thyroid inhibitors .. 1953 **104** 250
parrot fish, effect on frog tadpole metamorphosis ..... 1951 **101** 157
parrot fish, extract effect on respiratory metabolism in the white rat ..... 1952 **102** 278

*Tidal rhythm* of the diatom, Hantzschia amphioxys..... 1951 100 173
*Tide factor* hypothesis, time phase of the (abstract)..... 1949 97 238
*Tillina magna:* micronuclear number; excystment and vitality in diverse clones; capabilities of amicronucleate races..... 1946 91 256
*Time course studies* of photosynthesis and respiration in unicellular algae, using the platinum electrode, with time selection (abstract)..... 1949 97 271
*Time phase* of the tide factor hypothesis (abstract)..... 1949 97 238
*Time-temperature* relation of different stages of development..... 1941 81 431
*Tisbe furcata,* life history and biology..... 1948 95 320
*Tissue competence* and hormones in the development of Drosophila. 1943 84 34
*Tissue, elastic,* distribution in the arterial pathway to the carotid bodies in the adult dog (abstract)..... 1941 81 293
*Tissue extract* effects on cell division (abstract)..... 1950 99 340
*Tissues, invertebrate,* choline acetylase and choline esterase content (abstract)..... 1948 95 278
carbohydrate metabolism of (abstract)..... 1950 99 365
phosphorus metabolism of (abstract)..... 1950 99 366
*Tissues, mammalian,* composition of the nucleic acids of (abstract). 1950 99 332
*Toad,* Bufo fowleri, increase of cortical cell calcium with age..... 1942 82 392
*Toadfish,* cytochrome oxidase and succinic dehydrogenase in isolated islet tissue of..... 1951 100 191
*Tokophrya infusionum,* activity of contractile vacuole..... 1951 100 49
*Tolerance* of stenohaline forms to diluted sea water (abstract).... 1949 97 232
*Tooth succession* in the smooth dogfish..... 1948 95 100
*Toxicity responses* of dividing nuclei of Allium, demonstrated by the Sudan black B technique (abstract)..... 1949 97 235
*Toxin,* Triturus; chemical nature and effects on tissue respiration and glycolysis..... 1942 83 137
*Toxins,* action of on respiration and hemolysis of dogfish erythrocytes and on respiration of marine eggs..... 1949 97 57
*Tracheal filling* in Sciara larvae..... 1949 97 267, 323
*Transects,* intertidal, pioneer colonization on (abstract)..... 1949 97 238
*Transphosphorylation* in annelid muscle (abstract)..... 1950 99 352
*Transplantation,* and individuality differentials in inbred strains of rats..... 1943 84 1
experiments in hybrid frog embryos..... 1953 104 68
*Transport system,* ciliary, of Asterias forbesi..... 1942 83 438
*Treatment* of sea urchin gametes with metal-chelating agents..... 1953 104 224
*Trematoda:* Morphology and life history of Microphallus..... 1951 101 307
*Trematode,* digenetic, Zoogonoides laevis Linton, 1940; life history and morphology..... 1943 85 227
*Trematodes,* affinities of Deropristis inflata Molin..... 1942 82 292
from the planarian, Dugesia tigrinum (abstract)..... 1950 99 347
heterophyid, pathology and immunity to infection with (abstract)..... 1941 81 279
*Tri-carboxylic acid* cycle in the ciliate, Colpidium campylum..... 1949 96 257
*Triclad turbellarian,* sexual reproduction without cross-copulation.. 1952 102 1

*Triphenyltetrazolium chloride* (T.T.C.), reduction by cells of grasshopper embryo ... 1952 102 16
*Triploidy* induction in axolotl eggs ... 1942 83 367
*Tripneustes*, effects of halogenated alkyl amines on egg division ... 1952 103 44
*Triticum sativum*, plastid development in the scutellum of (abstract) 1947 93 211
*Triturus pyrrhogaster*, dorsalization of gastrula ... 1950 98 98
*Triturus rivularis*, analysis of pigment suppression in ... 1951 100 127
*Triturus torosus*, analysis of pigment suppression in ... 1951 100 127
abnormalities in mitosis in tail tips (abstract) ... 1947 93 205
chromosome number of (abstract) ... 1947 93 207
embryos, experimental temperature shock effects ... 1950 98 1
heteroploidy in ... 1950 99 386
indicator patterns in regeneration of tail and limb of larvae ... 1951 101 121
*Triturus toxin*, chemical nature and effects on tissue respiration and glycolysis ... 1942 83 137
*Triturus viridescens*, androgenetic eggs of ... 1941 81 402
effect of environmental factors of the sperm cycle on ... 1942 83 111
*Tropical mammals and birds*, insulation in ... 1950 99 225, 237, 259
*Tropisms* of squid larvae, effects of X-rays on ... 1950 98 247
*Trout*, some physiological factors involved in the maximum velocity at which they swim (abstract) ... 1947 93 223
*Trypsin* action on mating type substances of P. calkinsi ... 1951 101 99
*Tubifex tubifex* I, relations between metabolism and morphogenesis during regeneration ... 1947 92 167
*Tubularia crocea*, factors influencing regeneration and polarity determination in ... 1942 82 243
hydranth formation in (abstract) ... 1950 99 361
pH estimation in reconstituting pieces of stems (abstract) ... 1948 95 243
pigmentation changes during reconstitution ... 1952 102 91
rates of regeneration ... 1944 87 227
regeneration as affected by covering the perisarc ... 1942 83 416
regeneration influenced by ion concentration ... 1942 82 340
regeneration of coenosarc fragments removed from stem ... 1941 81 177
respiratory gradients ... 1953 104 109
temperature and reconstitution (abstract) ... 1941 81 300
*Tumor growth*, effect of adrenal preparations on ... 1952 102 226
*Tunicate*, Botryllus schlosseri, asexual reproduction in ... 1945 88 71
*Tunicates*, uptake of vanadium by ... 1951 101 84
*Turbellaria:* new species of Syndesmis and revision of the family, Umagillidae ... 1951 101 319
*Turbellarian fauna* of the Atlantic Coast of U.S.A. ... 1952 103 195
*Turtle*, Chelydra serpentina, effects of electrolytes and sugars on erythrocytes of ... 1949 96 9
embryos, studies on oxygen consumption and water metabolism. 1945 88 112
erythrocytes, agglutination by viruses ... 1952 102 149
fibrinogen, solubility in plasma-ethanol mixtures ... 1951 101 171
*Twinning* in Fundulus heteroclitus after centrifugation (abstract) ... 1951 101 201, 221

*Tyrosinase* and the respiration of Platysamia pupae ..... 1952 102 39
development of in the parthenogenetic egg of the grasshopper .. 1943 85 157

## U

*Uca pugilator*, analysis of molting process ..... 1953 104 115
modification of tidal rhythm, by tidal differences and by illumination (abstract) ..... 1952 103 297
persistent tidal rhythm (abstract) ..... 1952 103 297
physiology of the red chromatophores ..... 1949 98 218
studies of the daily rhythmicity of ..... 1951 101 71
*Ultraviolet* and white light, combined for vital staining (abstract) . 1948 95 238
irradiation and phenocopies ..... 1947 92 1
*Ultraviolet light* action on fertilizin ..... 1942 82 446
and heat, combined effect upon first cleavage in eggs of Arbacia (abstract) ..... 1948 95 259
and the development of Fucus eggs as affected by auxin and pH ..... 1942 82 127
effects on Chlorella pyrenoidosa (abstract) ..... 1949 97 222
effects (of 2537 Å) on cleavage of centrifuged Arbacia eggs (abstract) ..... 1949 97 241
effects on green algae and isolated chloroplasts (abstract) .... 1949 97 268
-induced delay on cleavage of Arbacia eggs, recovery from by means of irradiation with visible light ..... 1949 97 244, 315
injury in Strongylocentrotus purpuratus (abstract) ..... 1950 99 163
photography of chromatin and cytoplasm in living and centrifuged Arbacia egg ..... 1944 86 163
sensitivity to, in Chaetopterus eggs (abstract) ..... 1950 99 359
stimulation by intense flashes of (abstract) ..... 1941 81 291
*Ultraviolet microscopy*, recent developments in (abstract) 1944 87 160 1950 99 342
*Ultraviolet radiations*, comparative sensitivity of sperm and eggs to . 1946 91 81
effects on amphibian larvae (abstract) ..... 1950 99 330
effects on rate of cell division in Arbacia eggs (abstract) ..... 1949 97 232
*Ultraviolet treatment* of Colpidium ..... 1952 103 336
*Ulva*, photosynthesis of (abstract) ..... 1947 93 203
*Umagillidae*, revision of the ..... 1951 101 319
*Uptake* of radioactive iodine, $I^{131}$, by Ascophyllum ..... 1951 100 188
of $I^{131}$, effects of certain anti-thyroid drugs upon ..... 1951 101 62
of vanadium by tunicates ..... 1951 101 84
*Uranyl salts*, action on erythrocyte surface (abstract) ..... 1952 103 303
*Urea* adduct formation as a means of separating the components of lipid mixtures (abstract) ..... 1951 101 207
and sodium salicylate, hemolytic action of (abstract) ..... 1947 93 198
effect on oxygen consumption of blocked and active embryonic cells ..... 1949 96 1
excretion in the smooth dogfish kidney (abstract) ..... 1948 95 253
reabsorption by the smooth dogfish kidney ... 1948 95 253 1953 104 45
*Urechis caupo*, respiration and cell division in egg of ..... 1950 98 152

*Urethane*, effect on respiration in Pelomyxa ..... 1944 87 138
synergism of, with alkyl amines, in effects on sea urchin egg division ..... 1952 103 44
*Urine*, freezing point of, in fresh water fish ..... 1942 83 363
*Urine-formation*, as shown by the secretion of inulin, xylose, and dyes, in crayfish kidney ..... 1941 81 235
*Urodele larvae*, reversal of polarity in limbs (abstract) ..... 1949 97 232
*Usnic acid*, an antibiotic, and sperm metabolism (abstract) ..... 1948 95 286
*Utilization* of sugars and other substances by Drosophila ..... 1948 95 114

## V

*Vacuoles*, food, in Amoeba ..... 1942 83 173
*Vacuoloids*, mitochondrial arrangement, in epicytes of mouse lungs, as induced by ..... 1949 96 173
*Vanadium* uptake by tunicates ..... 1951 101 84
*Variants* of Dictyostelium discoideum ..... 1952 103 446
*Variations* in cell size during development of slime mold ..... 1953 104 297
*Velocity* at which trout swim; physiological factors involved (abstract) ..... 1947 93 223
*Venom*, wasp, cortical response of sea urchin egg to ..... 1953 104 210
*Venus mercenaria*, action of acetylcholine on the isolated heart of .. 1943 85 79
action of choline and related compounds on heart of ..... 1948 95 346
calcification of shell ..... 1952 102 9
conditioning for spawning in winter, and breeding its larvae in the laboratory ..... 1950 98 60
mechanism of action of acetylcholine on heart of ..... 1952 102 48
metabolism of the heart (abstract) ..... 1941 81 289
*Versene treatment* of sea urchin eggs and sperm ..... 1953 104 224
*Vertebrate blood* coagulation inhibitors, reactions of insect hemolymph to ..... 1953 104 372
*Vertebrate fibrinogens*, solubilities in plasma-ethanol mixtures ..... 1951 101 171
*Vertebrates*, a comparison between the intercerebralis-cardiacum-allatum of insects and the hypothalamo-hypophyseal system of ..... 1944 87 242
pituitary effects on chromatophores of ..... 1950 99 487
theories concerning the origin of; application of the precipitin technique ..... 1942 82 179
*Vertical migrations* of marine fishes ..... 1951 101 178
of the copepod, Acartia tonsa, under controlled illumination ... 1942 82 112
*Viability* of Drosophila in sub-zero temperatures ..... 1949 97 150
*Viruses*, agglutination of fish and turtle erythrocytes by ..... 1952 102 149
*Visco-elastic properties* of anterior byssal retractor muscle of Mytilus (abstract) ..... 1952 103 286
*Viscosity* and elasticity of smooth muscles during contraction, measurement of (abstract) ..... 1951 101 210
changes in grasshopper mitosis ..... 1946 90 109
protoplasmic, of muscle and nerve (abstract) ..... 1949 97 245
*Vital stain*, passage of, from host to ectoparasitic wasp (abstract) . 1952 103 302
*Vital dyes*, effects on metamorphosis of Bugula larvae ..... 1952 103 369

*Vital staining* by fluorescent dyes (abstract) ..... 1951 101 211
in ultraviolet and in white light combined (abstract) ..... 1948 95 238
of centrifuged Arbacia egg ..... 1941 81 114
*Vitamin A* and lipid metabolism in the frog (abstract) ..... 1947 93 211
reversible enzyme reduction of retinene to (abstract) ..... 1949 97 221
action of alcohol dehydrogenase on (abstract) ..... 1950 99 330
*Vitamin* $B^{12}$, studies on distribution of (abstract) ..... 1952 103 317
*Vitamin* $B_t$, studies on distribution of ..... 1953 104 359
*Vitamin C*, retardation of cell division by, in physiological concentrations ..... 1948 94 79
*Vitamin K* as a protoplasmic coagulant and parthenogenetic agent (abstract) ..... 1949 97 240
*Voltage*, current and resistance characteristics of injured nerves (abstract) ..... 1944 87 158
*Volvox aureus* Ehrenberg, culture of ..... 1947 92 200

## W

*Warburg manometry* of snails ..... 1953 104 301
*Wasp* venom, cortical response of sea urchin egg to ..... 1953 104 210
*Wasps*, sphecoid, spermatogenesis in (abstract) ..... 1947 93 218
*Water* and biological function (abstract) ..... 1950 99 368
and biological morphology (abstract) ..... 1950 99 367
content changes during the life cycle of the wood-eating beetle ..... 1944 86 23
currents and the growth of barnacles ..... 1946 90 51
loss and respiration in Phormia regina ..... 1949 97 64
metabolism of turtle embryos and oxygen consumption ..... 1945 88 112
propulsion rate as a function of latitude in Mytilus ..... 1953 104 171
retention by frogs; effects of fish and beef pituitary ..... 1952 102 25
secretion by nephric tubule of crayfish ..... 1941 81 127
transport and food requirements in marine filter-feeding invertebrates ..... 1952 103 356
*Wave of negativity* produced by acetylcholine conducted over an oil-saline interface (abstract) ..... 1948 95 281
*Wheat*, plastid development in the scutellum of germinating (abstract) ..... 1947 93 211
content of vitamin $B_t$ ..... 1953 104 359
*Wing stroke* and thoracic vibration frequency in some midges ..... 1953 104 439
*Woods Hole region*, Characeae of the ..... 1949 96 179
marine bryozoa of, associated with algae ..... 1949 96 32
*Worms*, annual history of a natural population of ..... 1951 101 131
*Wrasse*, color change and pigmentary innervation ..... 1942 82 273

## X

*Xanthophores*, double innervation of in Fundulus (killifish) ..... 1942 82 261
*Xanthophyll* of the sea slug, Hopkinsia rosacea ..... 1949 97 206
*Xanthophylls* of diatoms, brown algae, dinoflagellates and sea anemones ..... 1944 86 169

*X-organ* in crustaceans, histogenesis and cyclic phenomena..... 1943 **85** 87
*Xiphias gladius* L., hypophysis of..... 1942 **82** 401
*Xiphophorus maculatus*, reproduction in..... 1953 **104** 240
*X-ray-induced* cytoplasmic injury in androgenetic males (abstract) 1947 **93** 200
*X-ray irradiated* sea water effects on respiration of sea urchin sperm and eggs..... 1949 **97** 51
*X-ray irradiation* effect on nuclease activity and respiration of Tetrahymena..... 1953 **104** 351
effects on respiration of sea urchin sperm..... 1949 **97** 44
of marine gametes: effects at various levels on the germ cells of the clam..... 1953 **104** 197
*X-ray mutations* and the fecundity of Mormoniella (abstract)..... 1949 **97** 344
*X-rayed eggs* of Habrobracon, incidence and origin of androgenetic males..... 1948 **95** 354
*X-ray radiation* effect on DNA and on size of the grasshopper embryonic nuclei..... 1951 **101** 138
effect on squid larval tropisms..... 1950 **98** 247
effects on the restitution of dissociated Microciona (abstract). 1948 **95** 259
of eggs of Rana pipiens..... 1949 **97** 169
*X-rays*, action on fertilizin..... 1942 **82** 446
action on mating types and conjugation of P. bursaria (abstract)..... 1947 **93** 201
and cytoplasmic injury in Habrobracon eggs..... 1949 **97** 210
and dominant lethality..... 1945 **89** 61
and the reproductive cycle in pheasants..... 1944 **87** 134
biological effects of, on mating types and conjugation of Paramecium bursaria (abstract)..... 1948 **94** 113
disturbance of selective potassium accumulation in human erythrocytes by..... 1950 **99** 310
effects on cell division mechanisms (abstract)..... 1950 **99** 317
effects on chromosomes and nucleoli in ovarian eggs of Triturus pyrrhogaster (abstract)..... 1947 **93** 206
effects on haploid and diploid Habrobracon embryos..... 1952 **103** 170
effects on Paramecium calkinsi and P. caudatum (abstract)... 1951 **101** 232
*Xylose* secretion and urine formation by crayfish kidney..... 1941 **81** 235

## Y

*Yeast* cell, potassium and sodium content (abstract)..... 1950 **99** 319
cells, permeability to radiophosphate..... 1942 **83** 326
effect of temperature change on oxygen consumption (abstract)..... 1947 **93** 227
influence of glycolysis on potassium and sodium content (abstract)..... 1949 **97** 260
vitamin $B_1$ content..... 1953 **104** 359
*Yolk* absorption in Squalus acanthias (abstract)..... 1941 **81** 292
carbohydrate content in grasshopper egg and embryo..... 1953 **104** 1
hydrogen ion concentration in, of developing avian egg..... 1944 **87** 223
platelet lysis, enzymatic study of (abstract)..... 1952 **103** 281
sac circulation in the toadfish (abstract)..... 1952 **103** 307

## Z

*Zeta potential* of the eggs of Strongylocentrotus pulcherrimus, effect of salts on ..... 1947 **93** 267
*Zoeal stages* of the blue crab, external morphology ..... 1944 **87** 145
*Zonotrichia albicollis,* significance of the dark period in photoperiodic response of males ..... 1952 **103** 345
*Zoöchlorellae-free* Paramecium bursaria (abstract) ..... 1941 **81** 304
*Zoögonoides laevis* Linton, life history and morphology ..... 1943 **85** 227
*Zoögonus,* specificity and host relations ..... 1941 **81** 205

#70254

# THE BIOLOGICAL BULLETIN

PUBLISHED BY
THE MARINE BIOLOGICAL LABORATORY

## INDEX TO VOLUMES 81-104

Marine Biological Laboratory
LIBRARY
AUG 2 1955
WOODS HOLE, MASS.

JUNE, 1955

Printed and Issued by
LANCASTER PRESS, INC.
PRINCE & LEMON STS.
LANCASTER, PA.

MBL/WHOI LIBRARY
WH 1AZ6 F